



# 2017 Symposium on Cryptologic History *Milestones, Memories, and Momentum*

## PRELIMINARY PROGRAM (SUBJECT TO CHANGE)

**THURSDAY 19 OCTOBER 2017**  
Events at the Kossiakoff Center, Laurel, Maryland

**SESSION 1** **0830 - 0915**  
**PLENARY AUDITORIUM** Welcome and Keynote. Deputy Director, NSA (invited)

**SESSION 2** **0945 - 1115**  
**SESSION 2A AUDITORIUM**

**Inside Cyber Conflict: A View from the Archives** Moderator: Michael Warner  
Craig Wiener Penetrate, Exploit, Disrupt, Destroy: The Rise of Computer Network Operations as a Major Military Innovation  
Richard Andres Information Operations in Operation Iraq Freedom: Implications for Future Cyber Conflict  
Dave Sherman Intelligence or Security? The Two Faces of William Friedman's "Cryptologic Coin"

**SESSION 2B CLASSROOM A**  
**Literary and Imagined: Pre-20<sup>th</sup> Century Cryptology** Moderator: Greg Nedved  
Katherine Ellison Cryptography and the Early Modern Literacy Counterrevolution  
Richard SantaColoma Is the Voynich Manuscript a Modern Forgery? (And why it matters)  
Benedek Lang The Codex of Rohonc: Unfounded and Well-Founded Attempts at Breaking the Code

**SESSION 2C CLASSROOM B**  
**Cryptology During the Cold War** Moderator: Rick Ledgett  
Michael Bigelow From ASA to INSCOM: Marking 40 Years of Army SIGINT  
John Fox Robert Lamphere, the FBI's Cryptologic Pioneer  
Ivo Juurveen David Against Goliath: Estonian SIGINT and ECM against the Soviet Army During the August 1991 Coup d'Etat Attempt  
Chris Christensen The Evolving Relationship between Mathematics and Cryptology: 1951-1952, SCAG and the Beginnings of SCAMP and NSASAB

**SESSION 2D CLASSROOM C**  
**Britain: Friend or Foe?** Moderator: TBD  
Jamie Bisher A British-Japanese Cabal Against the US? US Intelligence Suspicions in 1920-1922  
David Kohnen Special Intelligence: Anglo-American Strategic Collaboration in Naval Operations in Peace and War, 1917-1945



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**LUNCH** **1115 – 1215**  
**SPEAKER** **1145 - 1205**  
Anthony M. Rutkowski International Signals Intelligence Law: Provisions and History

**PERFORMANCE** **1215 - 1250**  
**AUDITORIUM**  
The Parkway Chorale  
Commentary by Dave Hatch

## **SESSION 3** **1300 - 1415**

### **SESSION 3A** **AUDITORIUM**

#### **Writing the History of GCHQ**

Moderator: TBD

Panelists: Tony Comer  
John Ferris  
James Bruce

### **SESSION 3B** **CLASSROOM A**

#### **New Thoughts on World War II**

Moderator: John Fox

Paul Thomsen The Optics of MAGIC: FDR's 1941 SIGINT Stumbles and Japan's Hidden Plans for America (1940-1941)  
Colin Burke New Twists on Old Tales: Crypto Triumphs and Political Meddling – Japanese Codes and the Election of 1944  
Anthony Shields Soviet SIGINT Post-Stalingrad: What Do We Know Now?

### **SESSION 3C** **CLASSROOM B**

#### **Securing the Lines: Information Assurance During the Cold War**

Moderator: Mark Nixon

Jonathan Reed Winkler Information Assurance, Military Communications, and the North Atlantic Cables in the Early Cold War  
Lawrence X. Clifford ELINT and COMINT to Crypto: The Work of the 55th, 4080th, and 4157th Strategic Wings  
David Winters Over-the-Air Rekey (OTAR): A Rogue Security Revolution

### **SESSION 3D** **CLASSROOM C**

#### **Ciphers and Crime**

Moderator: Dave Cooley

David Oranchak The Unsolved Zodiac 340 Cipher: Features or Phantoms?  
Craig Bauer Of Cyanide and Ciphers



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## SESSION 4

1445 - 1600

### PLENARY

### AUDITORIUM

**Writing About Cryptology & Intelligence: Challenges and Opportunities** Moderator: Dave Sherman

Panelists:  
Steven Aftergood  
Mark Bradley  
Stephen Budiansky  
Michael V. Hayden

**FRIDAY 20 OCTOBER 2017**

Events at the Kossiakoff Center, Laurel, Maryland

## SESSION 5

0800 - 0915

### SESSION 5A AUDITORIUM

#### **Remembering the Great War**

Moderator: Betsy Rohaly Smoot

Robert Dalessandro (title to be determined)  
Michael Warner The Intelligence Revolution in World War I  
Dave Sherman William Friedman, Alastair Denniston, and Barbara Tuchman's *The Zimmermann Telegram*

### SESSION 5B CLASSROOM A

#### **German Cryptologic Issues from WWII through the Early Cold War**

Moderator: Jim Reeds

Sandy Zabell The Paradox of German high-level Cryptography  
Klaus Schmeh Western-German Cryptology in the Early Cold War

### SESSION 5C CLASSROOM B

#### **Topics in Cryptologic History**

Moderator: TBD

John O'Hara Intelligence and the Space Age  
Paul Orman Could the SIGABA have been Exploited?  
(Additional speaker TBD)

### SESSION 5D CLASSROOM C

#### **Cryptology in Foreign Lands**

Moderator: Tom Fogarty

Ralph Sawyer The Intercept Conundrum: Historical Theory and Practice in China and the West  
Greg Nedved The 1894-1895 Sino-Japanese War Further Decrypted  
Marty Busse And a Lurking League of Letter Openers: The Austrian Black Chamber



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## SESSION 6

0930 - 1115

### SESSION 6A AUDITORIUM

#### Vietnam Re-Examined

Moderator: John Tokar

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|---------------------|--|
| Leif Bentsen        | Recovery of the Vanished Hanoi High Command Radio (Morse) Network by Bio-Audio Devices – It Wasn't All Crypto, Baby! |
| Gabe Marshall       | USAFSS in Vietnam – Defeating Tet  |
| Thomas A. Reinstein | "I Honestly Believe They Would Get Run Over": SIGINT and the 1968 Paris Peace Talks                                  |
| Edwin E. Moise      | Reading Enemy Communications and Still Not Knowing: Tonkin Gulf 1964   |
| Robert Hanyok       | A Historian Confronts and Solves the Gulf of Tonkin Mystery  |

### SESSION 6B CLASSROOM A

#### The Early Cryptologists of World War I

Moderator: Mark Stout

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|--------------------|--|
| Jill Frahm         | Protecting the Lines: Telephone Operators and Security during World War I      |
| John Dooley        | Manly and Rickert – The Team That Cracked the Waberski Cipher                  |
| Betsy Rohaly Smoot | "Giving G2 the Goods": The Modest Devotion to Duty of the Radio Section Men    |
| Michael Bigelow    | Diary of a SIGINTer: Corporal Stuart Mahanay, AEF Radio Section                |
| James Bruce        | Interpreter Operators (Wireless) 1916 – 1919: Britain's First COMINT Linguists |

### SESSION 6C CLASSROOM B

#### Historical Cipher Systems

Moderator: Brenda McIntire

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|---------------------|---|
| Chris Christensen   | The Evolution of JN-25 and the Attacks on It                |
| Martine Diepenbroek | Caesar's Cryptography in the Enigma Machine                 |
| George Lasry        | Hagelin Cryptosystems – Historical and Modern Cryptanalysis |
| Ralph Simpson       | Cylinder Cipher M-94: A Centennial Celebration              |

### SESSION 6D CLASSROOM C

#### Cryptologic Skills: A World War II Perspective

Moderator: Pam Murray

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|-----------------|---|
| Tyler Morton    | The Birth of the Airborne Cryptologic Linguist  |
| Kyle Prescott   | Winds of War: The Code-Breaking Musicians of Navy Band Unit 16 at Pearl Harbor and Beyond |
| Raymond Schmidt | 'On-the-Roof' Gang and How Traffic Analysis Aided in Defeating the Imperial Japanese Navy |



# 2017

## Symposium on Cryptologic History

### *Milestones, Memories, and Momentum*

**LUNCH** **1115 - 1215**

**SPEAKER** **1145 - 1205**

Richard Stewart      The Essential Role of History in Intelligence

**PERFORMANCE** **1215 – 1250**

**AUDITORIUM**

Ellouise Schoettler      “The Hello Girls”

**SESSION 7** **1300 – 1415**

**SESSION 7A** **AUDITORIUM**

**Breaking Enigma: The Anglo-French-Polish Effort**      Moderator: Dave Hatch

Dermot Turing      The Role of Gustave Bertrand in the “Enigma Relay”

Olga Topol      Polish Enigma Double and the “Enigma Relay”

Marek Grajek      Interrogation at Eisenberg Castle: How Two Polish Officers Saved the Ultra Secret just before Overlord

Tony Comer      The Anglo-French-Polish Relationship During WWII

**SESSION 7B** **CLASSROOM A**

**Topics in World War I Cryptology**      Moderator: Bill Williams

Andrew Smoot      Using COMINT in August 1914: Examples from the Tannenberg Campaign

Klaus Schmeh      The Use of Steganography in World War I

George Lasry      Deciphering ADFGVX Messages from World War I

**SESSION 7C** **CLASSROOM B**

**Cryptologic Concepts and Modern Technology**      Moderator: Craig Bauer

Tim Carver      An Examination of a Cryptocurrency: Bitcoin

Austin Lubetkin      Attempting Encryption Based on Neurological Development

Nils Kopal      We Need Test Vectors! Why Test Vectors Could Improve the Research on Classical Cryptography

**SESSION 7D** **CLASSROOM C**

**Strong Personalities: Yardley and Denniston**      Moderator: TBD

Jeffrey Berkey      The Education of a Code Breaker: The Early Life of Herbert Yardley

Joel Greenberg      Alastair Denniston: Thirty Secret Years in Signals Intelligence



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## SESSION 8

1430 - 1645

### PLENARY

### AUDITORIUM

Concluding Remarks and Thanks

1430 - 1445

### Pencil-Pushing Mamas: Women in Cryptology

1445 - 1645

Moderator: Betsy Rohaly Smoot

Jessi Garrett-Harsch

Voices from the Past: Women in Cryptology at the Front in WWII

G. Stuart Smith

Setting the Record Straight: The FBI Should Credit Elizebeth Friedman in Spy Case

Jason Fagone

Listening to Himmler's Spies: The Clandestine War of Elizebeth Smith Friedman

Jackie Uí Chionna

The Lives of Emily Anderson OBE: Codebreaker and Music Historian

Liza Mundy

Code Girls: The Lives and Contributions of American Women

Codebreakers in World War II

**SATURDAY 21 OCTOBER 2017**

**Events at the National Cryptologic Museum**

**0900 – 1300**

**Tours of the museum given by CCH Historians, or explore on your own**

**0930 – 1030**

**Workshop on Sources for Cryptologic History**

Rene Stein

Betsy Rohaly Smoot

Dave Sherman

**1030 – 1130**

**William and Elizebeth Friedman**

Moderator: Sarah Parsons

The Friedman Tombstone

Elonka Dunin

A Centennial Celebration of the Wedding of William & Elizebeth Friedman

Bill and Jew-Lee Briere