



The Tutte Institute for Mathematics and Computing (TIMC)

Dr. Hugh Williams

Director, TIMC





Communications Security Establishment Canada


- National cryptologic agency
- Provide Government of Canada with two key services:
 - Foreign signals intelligence in support of defence and foreign policy (SIGINT)
 - Protection of electronic information and communication (IT Security)

(cont'd)






Communications Security Establishment Canada

- CSEC does not direct its activities at Canadians, or any person in Canada, or Canadians anywhere in the world
 - Directed by Government of Canada intelligence priorities
 - Does not direct its activities at citizens of its key allied nations
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History of the TIMC

- Established by Communications Security Establishment (CSEC) in 2003
 - Identified need for classified, strategic research facility
 - **Vision:** Cutting-edge innovation and technology
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The Tutte Institute (TIMC)

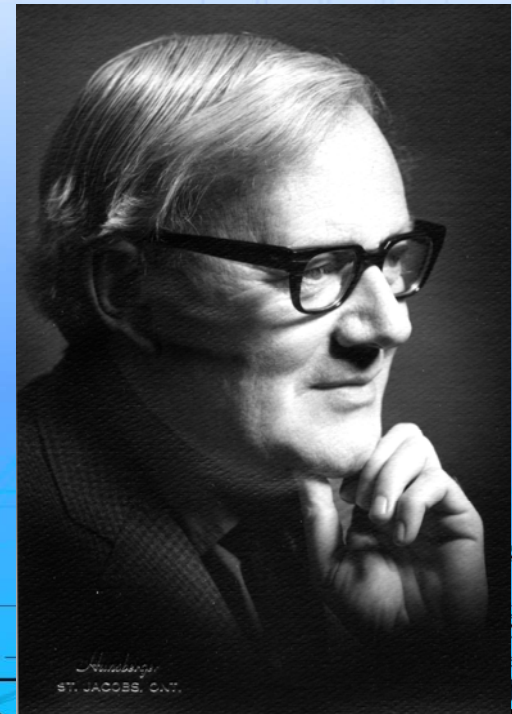
- A world-class mathematical and computational research institute
 - **Mission:** To support the Canadian Security and Intelligence community
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- The first of its kind in Canada, the institute employs 15 full-time staff and approximately 30 contract-based researchers
 - The Institute's research is focused on:
 - Cryptology
 - Knowledge Discovery/Data Mining
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William T. Tutte

(1917–2002)

- Award-winning mathematician and wartime codebreaker
- ‘Squaring the Square’
- Bletchley Park– FISH
- Algebraic Theory of Graphs
- University of Waterloo
- Officer in the Order of Canada





TIMC Objectives

Objective 1: RESEARCH

Address the most important scientific challenges facing the Canadian security and intelligence community.

Objective 2: RECRUITMENT

Engage Canada's top researchers to work in support of the Canadian security and intelligence community.

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TIMC Objectives

Objective 3: PARTNERSHIP DEVELOPMENT

Obtain the highest possible return on Canada's research partnerships within the allied cryptologic research community.

Objective 4: KNOWLEDGE CENTRE

Create and maintain a world leading cryptologic research knowledge centre.





TIMC Partners

- Communications Security Establishment Canada (CSEC)
 - International Partners
 - NSA, GCHQ, DSD, GCSB
 - Institute for Defence Analysis
 - CCR Princeton, CCR La Jolla, CCS Bowie
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Potential TIMC Partners

- Canadian Institutes
 - Fields Institute, Perimeter Institute
 - Canadian Government
 - CRC, NRC, DRDC
 - Canadian Universities
 - University of Ottawa, Carleton University
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TIMC and Universities

Potential scenarios:

- Post Doc support
- TIMC members become associated researchers (e.g. adjuncts) at universities
- Research sponsorship
- Unclassified joint research activities


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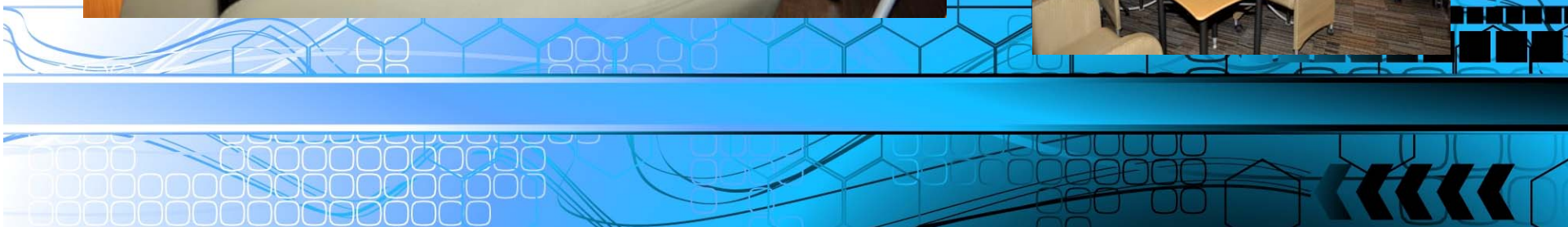
TIMC and Universities

Potential scenarios:

- Joint Distinguished Speaker Series
 - Visiting Scholar program
 - Possibility to provide funding to select academic conferences and workshops
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TIMC Facility




Advanced Collaborative Environment (ACE)

- Unique to the TIMC
- Enables interaction between remote sites





Knowledge Centre

- Dedicated to the management of information
 - Currently possesses ~10,000 volumes (excluding e-books)
 - Extensive in-house library in development
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Advantages of Working with the TIMC

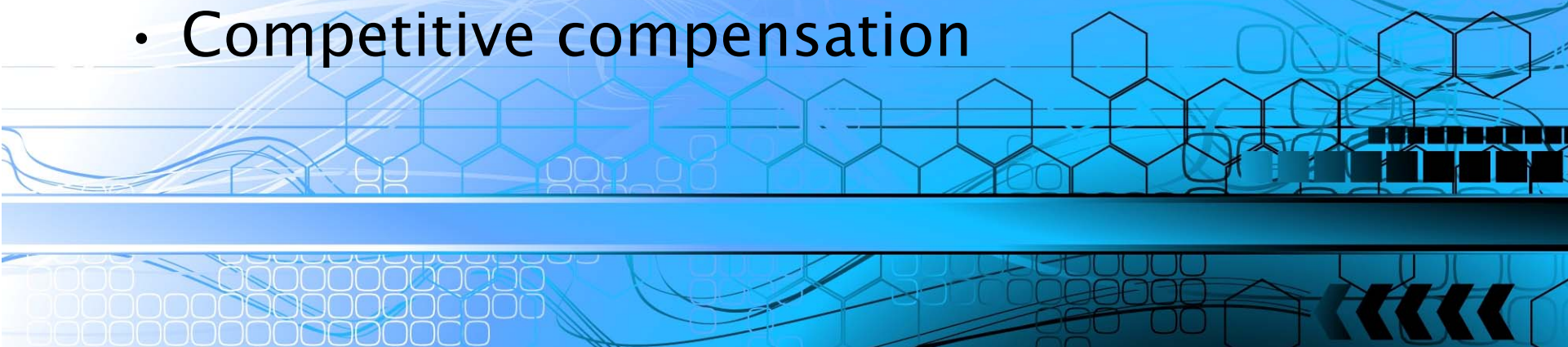
- Solving problems in a challenging and meaningful field
- Work that makes a difference
- State-of-the-art technology
- A world-class Knowledge Centre

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Advantages of Working with the TIMC

- Advanced Collaborative Environment comprised of a network of distinguished mathematicians, computer scientists and engineers
 - Varying modes of work
 - Competitive compensation
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TIMC Recruiting

- Research experts in the fields of mathematics, computer science and engineering
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TIMC Researchers

- Interchange Program: allows for long-term secondment from a university to the TIMC
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Requirements

- Canadian Citizenship
- Applicants must be eligible for a Top Secret Security Clearance
- Researchers normally begin with a short-term contract (typically one week – ten days)

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Requirements

- The process for obtaining a Top Secret Security Clearance includes:
 - A credit and criminal record check;
 - An initial interview;
 - A polygraph examination; and
 - A psychological assessment.
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Want to Know More?

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Questions?