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What's Next for Investigative Genetic Genealogy?

Developing a Framework for Best Practice Use

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 Promega | Powered for 33 years

ISHI

INTERNATIONAL SYMPOSIUM
ON HUMAN IDENTIFICATION

WASHINGTON D.C.
OCT. 31-NOV. 3, 2022

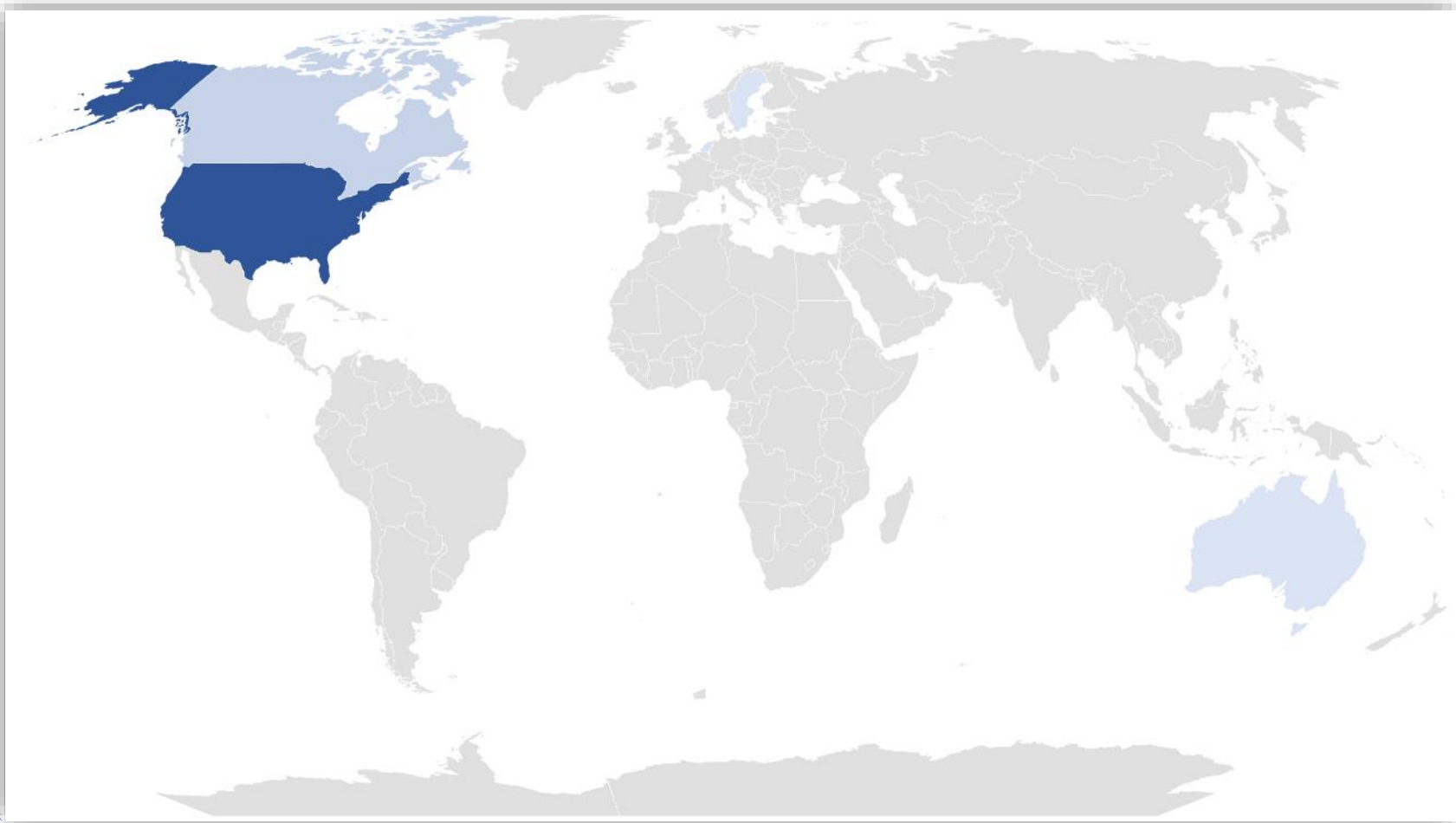
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Any views or opinions expressed in this presentation are not necessarily the views of the agencies involved in these research projects.

This presentation does not constitute legal advice.



F/IGG – The International Context



Heat map, use of F/IGG, generated with Microsoft Mapping Add-On
Sources include: https://isogg.org/wiki/Law_enforcement_cases_solved_using_genetic_genealogy and
Dowdeswell, T. (2022). Forensic Genetic Genealogy Project. Mendeley Data.



F/IGG – Australia and New Zealand

- Research and F/IGG implementation
 - Research cases
 - Development of SOPs
 - Legal review
 - Validation and testing of providers and platforms
- ‘Somerton Man’

case – South
Australia



The New York Times | <https://www.nytimes.com/2022/07/26/world/australia/somerton-man-name.html>

DNA Researchers Name the Somerton Man, Australia's 73-Year-Old Cold Case

Sleuths amateur and professional alike have been puzzled for years by the discovery in 1948 of an unidentified man's body slumped by a sea wall near Adelaide. The South Australian police have not verified the new finding.

By Alan Yuhas
July 26, 2022

Two researchers using forensic genealogy put a name to the so-called Somerton Man this week, saying they had finally solved the central mystery of an Australian cold case that has stymied investigators for 73 years and inspired theories about spies, smuggling, ballet and teeth.

The police in South Australia, who exhumed the man's body last year, have not verified the identity and said they had no comment on their own investigation. A spokesperson said they would comment after the results of forensic testing had

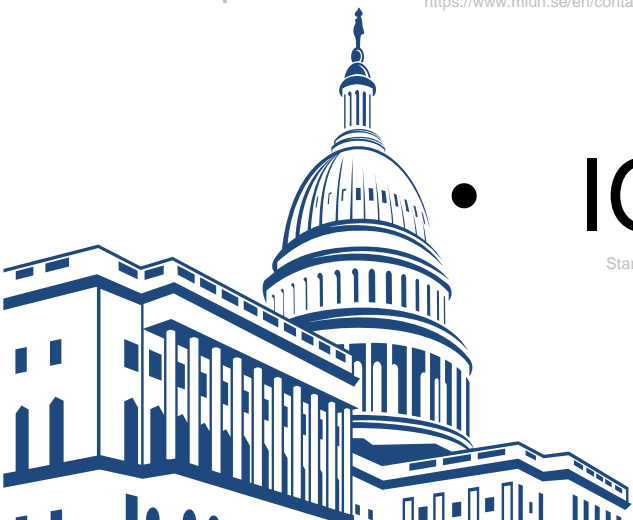
F/IGG – European Union

- Policy development
 - Government reviews
 - Data privacy considerations
- Pilot cases in Sweden
 - Genealogist Peter Sjölund: Honorary Doctorate 2022

<https://www.miun.se/en/contact/Press/News-archive/2022-6/quintet-becomes-new-honorary-doctors-at-mid-sweden-university/>

- IGG trial in the UK

Starling, B. (2022). How police are using DNA from ancestry websites to catch murderers. The Telegraph



F/IGG – Laying the tracks



Wikimedia, Australia-US Area Comparison.
https://commons.wikimedia.org/wiki/File:Australia_%E2%80%93_U.S._area_comparison.jpg



F/IGG – Laying the tracks

Some history: the Australian railways

Standard gauge
4ft 8½ in

Irish standard gauge
5 ft 3 in

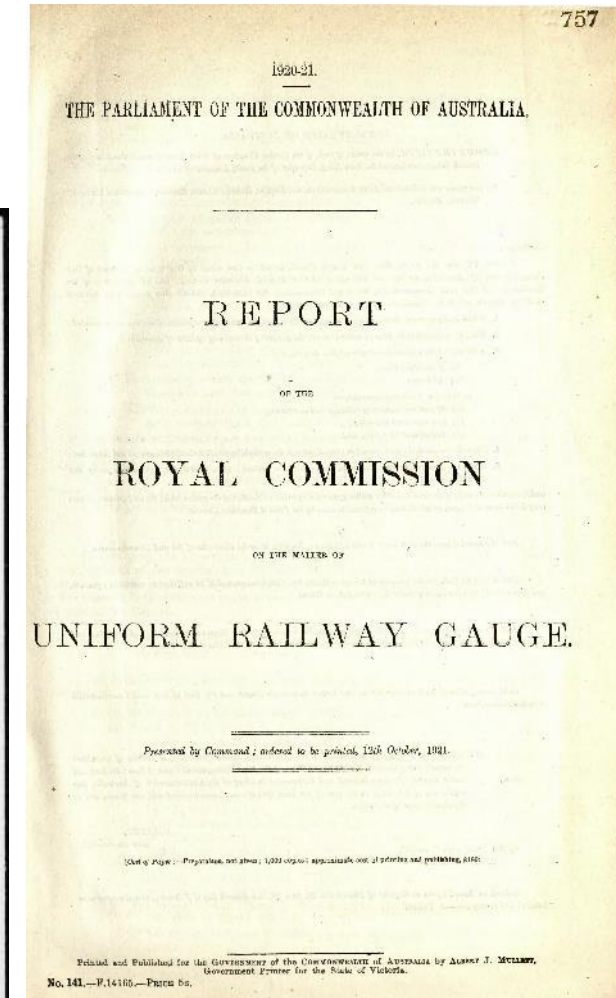


F/IGG – Laying the tracks

Some history: the Australian railways



National Library of Australia, PRG106 B656f N021. <https://nla.gov.au/nla:img/443/tarkine/nla.obj-155011074>
[picture]. <https://nla.gov.au/443/tarkine/nla.obj-155011074>



F/IGG – Laying the tracks

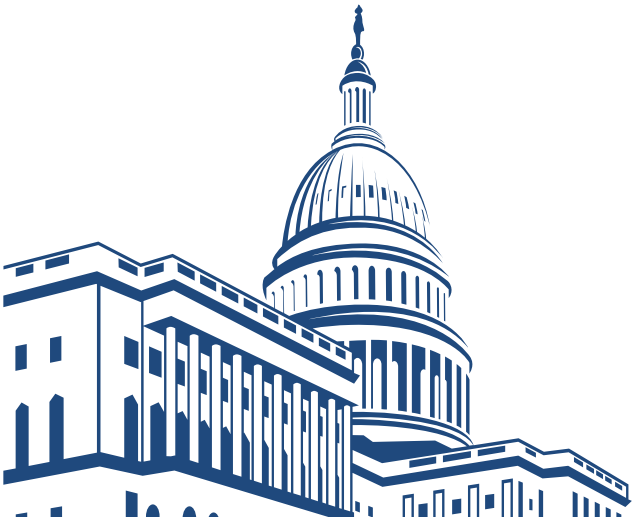


Photographs licensed from Shutterstock. Photo IDs 1666803100 and 1038405283.



Efforts to Standardize F/IGG

- US Department of Justice
Interim Policy for FGG, 2019
- Swedish Police Authority
Forensic DNA Traces and Genealogy: Use of IGG in criminal investigations, 2021



Efforts to Standardize F/IGG

- Aust. & New Zealand Policing Advisory Agency
F/IGG Community of Interest, 2022
- Legislation (Maryland, Montana, Utah)
- Consideration of certification for practitioners



We've been here before...

- CODIS 'Core' Markers
 - 1990s - Technical Working Group on DNA Analysis Methods (TWGDAM)
 - 1994 US DNA Identification Act
 - CODIS software now used in over 50 countries
 - The standardization of STR markers established in the 1990s and early 2000s is **instrumental** to international casework, humanitarian work and missing persons investigations



Areas of International Difference

- Reference testing
 - Including international testing arrangements
- Access to research repositories

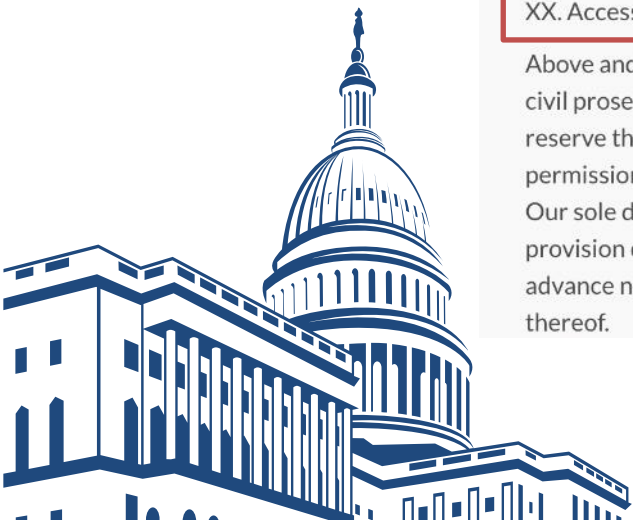
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Areas of International Difference

- Privacy laws
 - EU General Data Protection Regulation and Australian *Privacy Act*
 - Informed consent
 - Familial and First Nations considerations
 - Extraterritorial operation

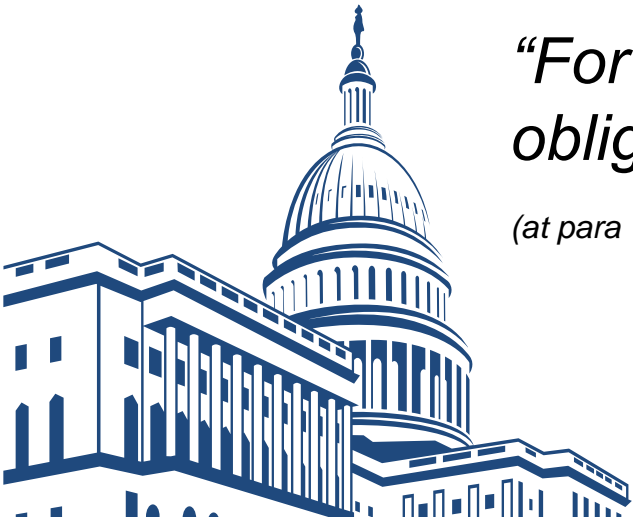


Areas of International Difference

- Judicial processes
 - Coroner's Court and Criminal proceedings including Rules of Evidence
- Death penalty considerations
 - *Roger Judge v Canada* No. 829/1998 U.N. Doc. CCPR/C/78/D/829/1998 (2003)

“For countries that have abolished the death penalty, there is an obligation not to expose a person to the real risk of its application”

(at para 10.4)



Areas of International Difference

- Terminology

Murder
Not Infanticide

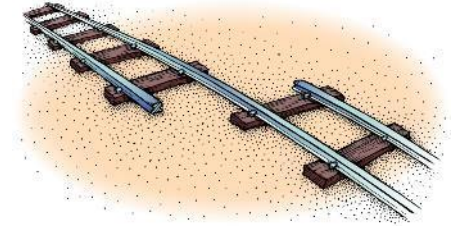
GEDmatch Pro portal to identify the perpetrator of a Violent Crime (where 'Violent Crime' is defined as murder, nonnegligent manslaughter, aggravated rape, robbery, or aggravated assault) or to identify human remains.

Wounding
Causing grievous bodily harm
Not Common Assault

Aggravated Sexual Assault (**most**)
Not Sexual Assault



What more can be done?



- An International Working Group
 - Top down approach – high-level principles to protocols, while maintaining and enhancing transparency in use of F/IGG
 - Standardisation of case types and definitions for F/IGG
 - Improvements to third-party consent and considerations for international reference testing
 - Eventually, an **ISO Guidance Document** or **ISO Technical Note** (ISO/TC 272)



Privacy, Trust and Informed Consent

- Does the 'opt in' arrangement for F/IGG promote trust and value informed consent?
- How can we enhance the process further?
- Are there ways to enhance public trust?
 - Case reviews
 - Academic publications (*Tillmar 2021 a good example*)
 - Interviews/presentations to community
 - Awareness for lawyers/judicial officers



Privacy by design

- Privacy Impact Assessments
 - Is there a more privacy-compliant means of achieving the same objective?
 - What are the unforeseen implications?
 - In designing an F/IGG framework:
 - Put in place processes and technology to minimise privacy risks
 - Regularly consult with stakeholders (law enforcement, vendors, academia, security specialists, genealogy bodies)
 - Promote a privacy culture



Key privacy recommendations



- Policies, procedures and governance



- Transparency & consultation



- Secure & appropriate use of data



- Review



- Working with external vendors



- Reference Testing



Conclusions

- F/IGG is developing in many countries
- Privacy by design and a cautious approach will help preserve the technique
- International cooperation is critical

Genealogy is an international endeavour



Conclusions



- International cooperation

List of core recommendations:

Gene

- Regulating the use of DNA where the current law is either silent or fragmented. This includes elimination sampling, mass screening, familial searching, and genetic genealogy searching.

