

# Bibliometrics Program Gorgas Memorial Library

Walter Reed Army Institute of Research/Naval Medical Research Center

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on assignment at

Walter Reed Army Institute of Research/Naval Medical Research Center  
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# BACKGROUND

- ▶ Founded in 1893 as the Army Medical School and named the Walter Reed Army Institute of Research (WRAIR) in 1955, the WRAIR is the premier Department of Defense, Army biomedical research organization and consists of a state-of-the-art facility located in Silver Spring, Maryland, and laboratory and clinical facilities in Asia, Africa, and Europe.
- ▶ Similarly, the Naval Medical Research Center (NMRC) is the Navy's premier medical research organization, with roots going back to 1941. NMRC is the headquarters command for the nine laboratories of the Navy Medicine Research, Development, Testing and Evaluation (RDT&E) worldwide enterprise.
- ▶ The Gorgas Memorial Library (GML) is a full service research library providing information services and research support to WRAIR and NMRC researcher's efforts to perform innovative and accountable research in support of the Warfighter. GML resources and services are available to scientists and staff located in Silver Spring and in the associated overseas labs.

# BIBLIOMETRICS PROGRAM BACKGROUND

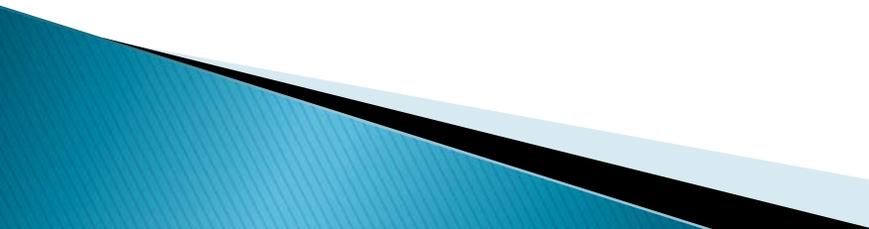
- ▶ Begun under the direction of Terrie Wheeler, AMLS, during her stint as Chief of the Gorgas Memorial Library (Sept. 2007– late Dec. 2010)
  - ▶ Contract staff hired in 2009 – .50 FTE assigned to bibliometrics program
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# BIBLIOMETRICS PROGRAM BACKGROUND

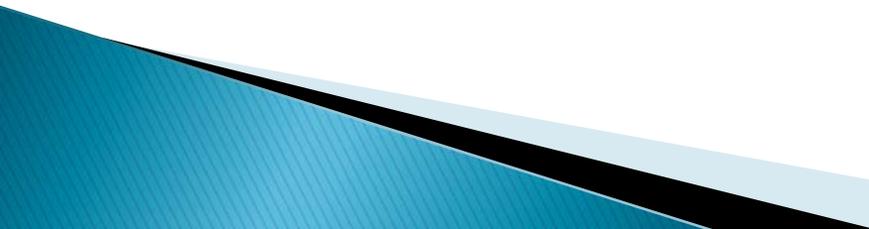
- ▶ Keyed to the WRAIR Balanced Scorecard Objectives

Library Products/Services	WRAIR/NMRC Objectives	BSC Measures
Research Impact Evaluations	Perform innovative and relevant Scientific Research  Interventions & products to enhance Warfighter resilience & reduce/mitigate impact of blast injury & combat stress	# of citations for WRAIR Citation index  # of high impact publications for WRAIR  # of publications, presentations, abstracts

# Initial Steps

- ▶ GML licensed Web of Knowledge and its suite of tools in 2009
  - ▶ In 2009, initially based on presentation by Ann Kushmerick of Thomson–Reuters
  - ▶ Required
    - Development of an institutional search strategy
    - Development of an appropriate subject strategy
    - Consultation and review by WRAIR researchers in each subject specialty
- 

# Initial Structure included:

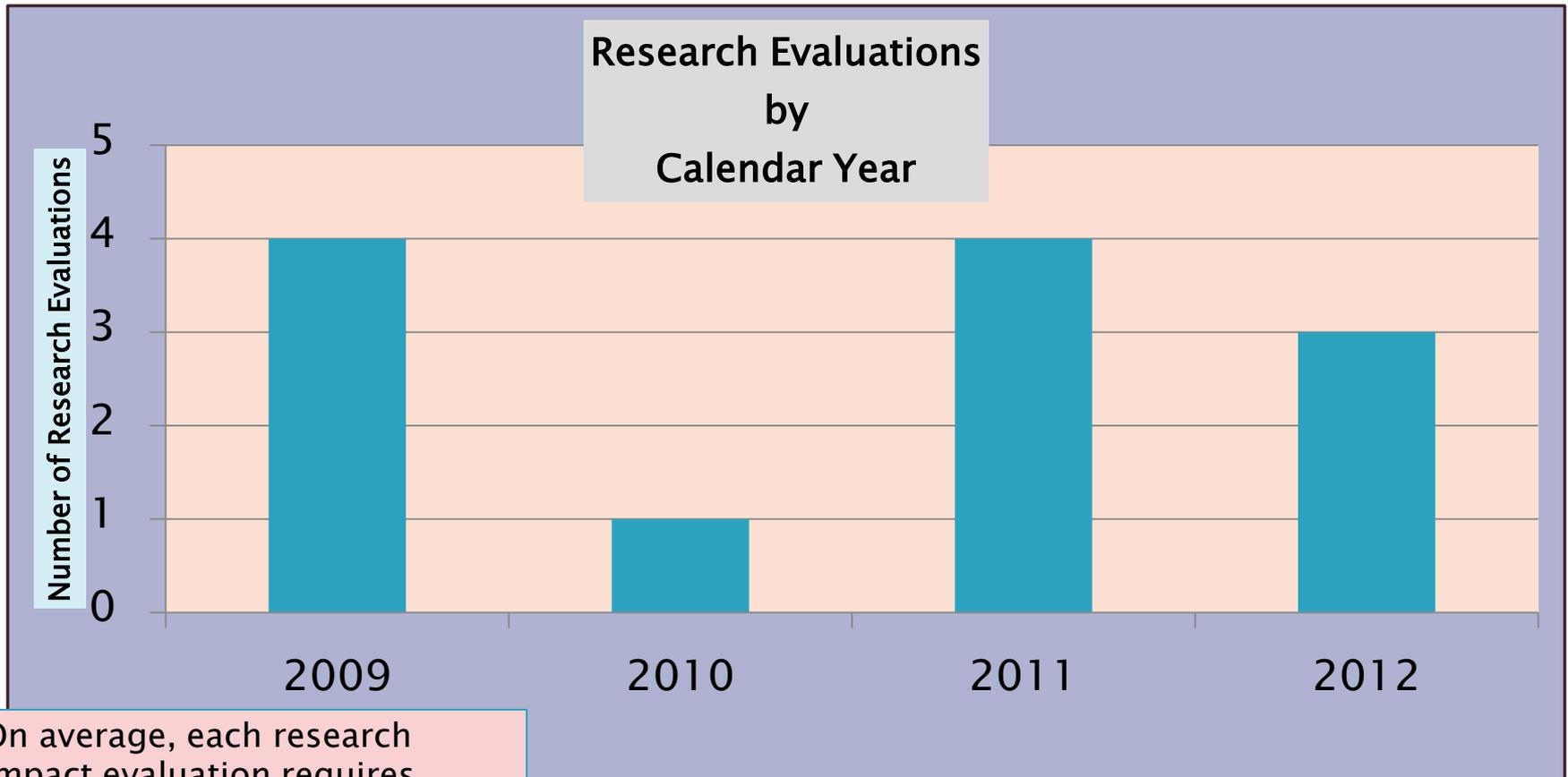
- Publications in each year for subject as a whole
  - Citations in each year for subject as a whole
  - Papers in each year – institutional focus
  - Citations in each year – institutional focus (including h-index)
  - Ranking by Institution and Organizational Collaborations for Army and Navy
  - Subject foci of institutional publications
  - Journals where institutional publications appear (including impact factor)
  - Highly-cited papers and “Hot papers” from ESI
  - Global influence – using Web of Science® Citation Map
  - Summary/Conclusion of Analysis
- 

# Structure Evolution—Integration of a Timeline of Research Progress

- ▶ Focuses on a scientific breakthrough and traces its basic science roots through articles and their citation impact
  - Sparked by a request by a senior leader at one of our Overseas Labs in response to the announcement in October 2011 in an online article in the *New England Journal of Medicine*\* that the malaria vaccine candidate [provides] “...young African children with significant protection against clinical and severe malaria with an acceptable safety and tolerability profile”.
  - The RTS,S evaluation titled “*WRAIR RTS,S and Malaria Research: An Historical and Bibliometric Analysis*” includes an analysis of the development of that vaccine from the 1960’s to today, stressing the contributions of WRAIR research in that effort.
- ▶ Second section includes the basic elements of a bibliometric evaluation described previously, enhanced by use of Essential Science Indicators to show WRAIR research in its ranking in the field

\*Agnandji ST, Lell B, Soulanoudjingar SS, Fernandes JF, Abossolo BP, Conzelmann C, et al. First Results of Phase 3 Trial of RTS,S/AS01 Malaria Vaccine in African Children. *New England Journal of Medicine*. 2011;365(20). doi: 10.1056/NEJMoa1102287. PubMed PMID: WOS:000297041900005.

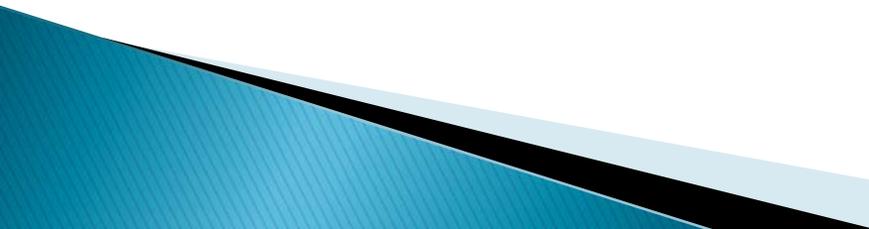
# Bibliometrics Program Progress



On average, each research impact evaluation requires approx. 80 hours of staff time.

Currently working on a revised view of research evaluations for dengue, malaria drugs, malaria vaccine, enteric diseases through 2012 at the request of the MRMC Command.

# Interest and Response

- ▶ Initial interest emanated from Chief's promulgation of the research impact evaluations
  - ▶ Interest by senior leadership at US Army Medical and Material Command (USAMRMC)
    - First four evaluations done for Acquisition, Logistics and Technology (ASA(ALT)) review of scientific research programs on malaria drugs, malaria vaccine, enteric diseases, and dengue
    - Subsequently, MRMC contracted for additional evaluations of other program areas with WRAIR providing training in bibliometrics and Web of Science and its analytical tools
- 

# Positive Response

Arthur Brown, COL, MC

Deputy Commander for Science

Armed Forces Research Institute of Medical Sciences

(email 4 Jan 2011)

“But again, we thank you ... greatly for this analysis. It is especially timely as we look at multiple ways to assess and highlight AFRIMS at its 50-year anniversary”.

# Positive Response

Maryanne T. Vahey, Ph.D., DAC  
Science Director  
Walter Reed Army Institute of Research  
(email 4 Jan 2011)

“I am very impressed with the data presented in these slides! This is an approach that we may wish to use as a precedent for similar analyses of programs at the WRAIR. The tangible nature of the data is very useful for the Balanced Scorecard metrics as well”.

(email 8 June 2011)

“Fantastic! May I suggest that the three Research Evaluations (AFRIMS, USAMRU-K and USAMRU-E) be printed out and put in a binding by DMAVS to have ready for the incoming Commander? “



# Positive Response

Tom Logan, PhD

Colonel, Medical Service

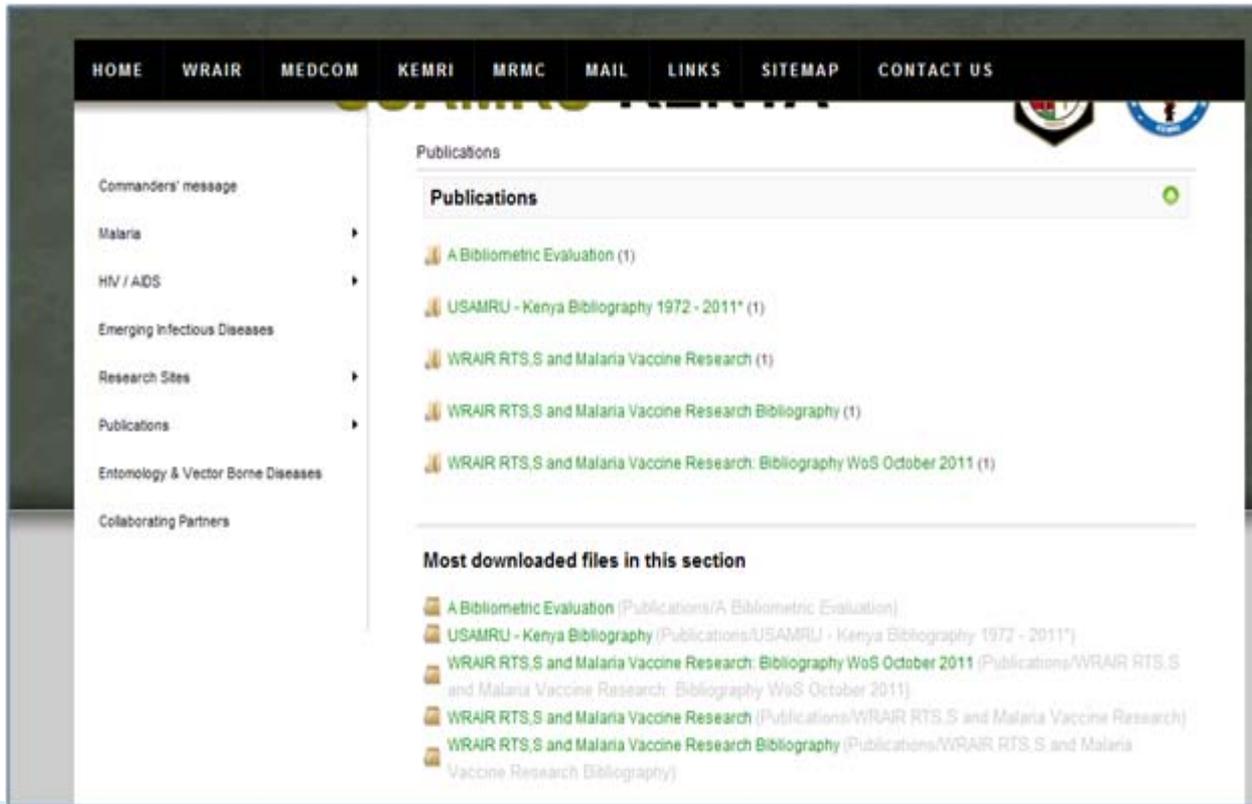
Commander, US Army Medical Research Unit–Kenya Director, The  
Walter Reed Project

(email 8 Nov 2011)

“Wow! This is very, very impressive, much more than I had considered possible. I knew from the USAMRU–Kenya ppt and bibliography that you prepared earlier that this would be good but honestly this is a work of art! I plan to use it in a briefing at the upcoming WRAIR Commanders conference and also display it on the USAMRU–Kenya website if that's ok w/you? Incredible work!”

# Follow-Through

The WRAIR Overseas Lab in Kenya has included links to the USAMRU-K and RTS,S research evaluations on its website under Publications (<http://www.usamrukenya.org>).



The screenshot shows the website's navigation menu with links for HOME, WRAIR, MEDCOM, KEMRI, MRMC, MAIL, LINKS, SITEMAP, and CONTACT US. The left sidebar lists categories such as Commanders' message, Malaria, HIV/AIDS, Emerging Infectious Diseases, Research Sites, Publications, Entomology & Vector Borne Diseases, and Collaborating Partners. The main content area features a 'Publications' section with a list of links to various bibliographies and research evaluations, including 'A Bibliometric Evaluation (1)', 'USAMRU - Kenya Bibliography 1972 - 2011\* (1)', and 'WRAIR RTS,S and Malaria Vaccine Research (1)'. Below this is a 'Most downloaded files in this section' list, which includes the same titles with their respective file paths.

HOME WRAIR MEDCOM KEMRI MRMC MAIL LINKS SITEMAP CONTACT US

Publications

**Publications**

- [A Bibliometric Evaluation \(1\)](#)
- [USAMRU - Kenya Bibliography 1972 - 2011\\* \(1\)](#)
- [WRAIR RTS,S and Malaria Vaccine Research \(1\)](#)
- [WRAIR RTS,S and Malaria Vaccine Research Bibliography \(1\)](#)
- [WRAIR RTS,S and Malaria Vaccine Research: Bibliography WoS October 2011 \(1\)](#)

**Most downloaded files in this section**

- [A Bibliometric Evaluation \(Publications/A Bibliometric Evaluation\)](#)
- [USAMRU - Kenya Bibliography \(Publications/USAMRU - Kenya Bibliography 1972 - 2011\\*\)](#)
- [WRAIR RTS,S and Malaria Vaccine Research: Bibliography WoS October 2011 \(Publications/WRAIR RTS,S and Malaria Vaccine Research: Bibliography WoS October 2011\)](#)
- [WRAIR RTS,S and Malaria Vaccine Research \(Publications/WRAIR RTS,S and Malaria Vaccine Research\)](#)
- [WRAIR RTS,S and Malaria Vaccine Research Bibliography \(Publications/WRAIR RTS,S and Malaria Vaccine Research Bibliography\)](#)

# Follow-Through

- ▶ The Gorgas Memorial Library website ([http://wrair-www.army.mil/OtherServices\\_Library.aspx#Services](http://wrair-www.army.mil/OtherServices_Library.aspx#Services)) includes information about the bibliometrics program.



Services	
<a href="#">Loansome Doc</a>	Enables customers to order articles directly from PubMed. If an item is not available in PubMed see Interlibrary Loan below for further options.
<a href="#">Web of Science</a>	Serves basic researchers with workflow optimization tools. Serves administrators with publication impact data.
<a href="#">EndNote / EndNote Web</a>	The library offers access through the Web of Science Portal for saving and citing references. The latest release of the software version of EndNote is also available - contact the Enterprise Service Desk to have it downloaded to your computer.
<a href="#">Bibliometrics</a>	The library offers bibliometrics services. These products, including Research Impact Analyses, Publication Strategies, and Publication Lists, can be customized per division.
<a href="#">Data Curation Support</a>	The library fosters collaborative science at WRAIR/NMRC by providing resources to researchers seeking to develop strategies for data sharing and curation.

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Initially, content limited to a narrative description of the program under Services

# Follow-Through

- ▶ The narrative information has been enhanced to provide fuller details regarding available bibliometric services.

HOME>>Other Services>>GML>>Bibliometrics Monday, January 14 2013

**Bibliometrics**

**Publication Strategies**

GML staff can help define the best journal target for your research paper. Bibliometric tools such as Journal Citation Reports® offer a systematic, objective means to evaluate journals, with quantifiable, statistical information based on citation data. Librarians can use this tool to compile articles' cited references in JCR that are used to measure research influence and impact at the journal and category levels, as well as to show the relationship between citing and cited journals. Using Journal Citation Reports, authors and editors can identify the most appropriate, influential journals in which to publish. For more information, [contact](#) the Gorgas Memorial Library staff.

**Research Program Evaluation**

Using a variety of information techniques and ISI Web of Knowledge® tools (e.g., Web of Science, Journal Citation Reports, and Essential Science Indicators®), GML staff can provide a thorough, evidence-based look at the research performance of a program area by examining its publications and viewing the journal article impact and strength of research influence using citation metrics.

Benefits of research evaluations:

- ▶ Provide a means to quantify and document research impact
- ▶ Establish data-driven justifications for future requests for funding
- ▶ Quantify return on research investment
- ▶ Enable the discovery of how research findings are being used
- ▶ Identify similar research projects and possible collaborators

Left sidebar menu:  
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Representative research evaluations prepared by GML include:

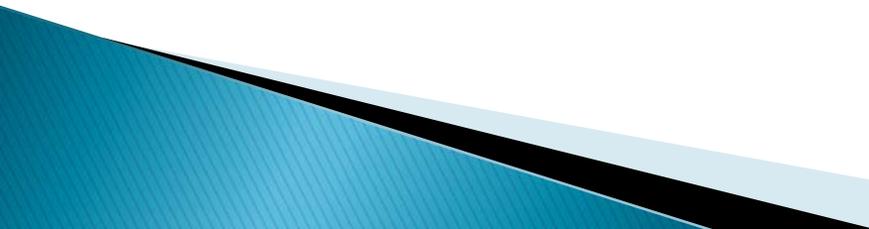
<a href="#">WRAIR RTS,S and Malaria Vaccine Research: an Historical and Bibliometric Analysis</a> 	Oct 2011
<a href="#">Excellence in USAMRU-Kenya Research: A Bibliometric Evaluation</a> 	June 2011
<a href="#">Excellence in USAMRU-EUROPE Research: A Bibliometric Evaluation</a> 	May 2011

[top](#)

ISALUTE 

# Research Evaluation Challenge #1

## Development of Search Strategy

- ▶ Lack of standardization in how researchers have listed affiliation in their publications means that institutional identification in the citations in Web of Science is sometimes unreliable
  - ▶ Lack of address/affiliation information on older citations in Web of Science is problematic (notably for retrospective evaluations such as the one done for the AFRIMS 50<sup>th</sup> anniversary)
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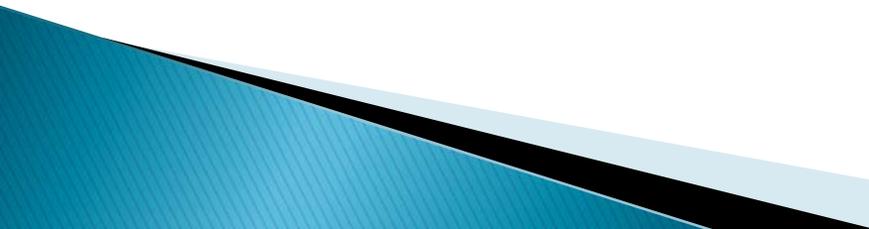
# Response to Challenge #1

- ▶ Verification of citations in the Web of Science set against institutional bibliographies
- ▶ Compilation of manual sets of citations (by WoS UT number) that are then included in search strategies to compensate for such deficiencies
- ▶ WRAIR participation\*, for those interested, in the ResearcherID project ([www.researcherid.org](http://www.researcherid.org)) to contribute to author disambiguation efforts and to more clearly associate WRAIR with its research

\*Begun under Terrie Wheeler's leadership as Chief, GML.

# Research Evaluation Challenge #2

## WoS Limits

- ▶ The 100,000 citation WoS limit on the number of citations that could be retrieved in any search statement was problematic, particularly for the research impact evaluations done for enteric diseases and HIV/AIDS
  - ▶ The 10,000 citation limit for the WoS citation analysis feature is problematic, particularly when doing a longitudinal study that has a large result set
  - ▶ The WoS limit on the number of search strategy statements that can be SAVED is problematic for complex search strategies
- 

# Response to Challenge #2

- ▶ The 2011 release of WoS eliminated the 100,000 limit for the number of citations retrieved per search statement
  - ▶ It is often necessary to divide by decade to perform a citation analysis on a large result set
  - ▶ It is often also necessary to save a search strategy out in WORD to reuse it consistently
- 

# Research Evaluation Challenge #3

## SKEPTICAL SUBJECT CONSULTANTS

- ▶ Researchers assigned as subject specialists are not familiar with the value or mechanics of bibliometrics as a measure of research
  - ▶ Government researchers at times not fully on board with using publishing as a metric for performance
  - ▶ Subject specialists not necessarily skilled database searchers
- 

# Response to Challenge #3

- ▶ One-on-one consultations to establish and validate a search strategy and factual and time-consuming evidence to support bibliometric data

and

- ▶ Patience, patience, patience!
- ▶ Positive outgrowth – can build relationships with researchers and enhance credibility of library staff

# Research Evaluation Challenge #4

## LACK OF STAFFING

- ▶ Absence of senior leadership (Acting Chief in place since 2010) at the Gorgas Memorial Library
  - Hampers expansion of the program
  - Lowers the overall profile of the library and its services and that of bibliometrics in particular
- ▶ Staff shortages and other demands have diverted assigned contractor to projects other than bibliometrics

# Response to Challenge #4

- ▶ Website enrichment
- ▶ Recognizing when a research request can be filled creatively by a research evaluation
  - For example, the original request was for a bibliography of citations related to WRAIR research on RTS,S; however, GML provided:
    - RTS,S research impact evaluation AND
    - A bibliography of WRAIR citations related to RTS,S on which the research evaluation was based
- ▶ Increasing deadlines and altering research evaluation content to be able to respond more quickly to even the few requests received

# QUESTIONS?

## CONTACT:

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**THANK YOU!**

