ARLG
Antibacterial Resistance Leadership Group

May 2023
Q2 Newsletter

Welcome to the ARLG Newsletter! Here, you will receive important updates from ARLG regarding recent events, grants, publications, and the committees that help us work toward our mission: to prioritize, design, and execute clinical research that will impact the prevention, diagnosis, and treatment of infections caused by antibiotic-resistant bacteria.

Get Involved with ARLG

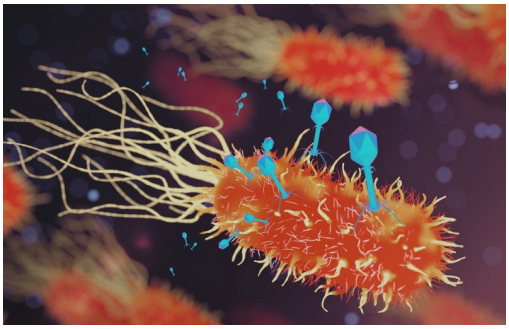
ARLG continuously accepts proposals for clinical studies designed to prevent, diagnose, treat, or eradicate antibiotic-resistant bacterial pathogens. We also award grants and fellowships to qualified investigators. If you are interested in getting involved with ARLG, apply now or contact us for more information.

Submit a Proposal

Contact Us

News

Robin Patel, Robert Schooley, and ARLG Cited in JAMA Article on Renewed Interest in Phage Research



An article published in the March 2023 issue of JAMA, “As Superbugs Flourish, Bacteriophage Therapy Recaptures Researchers’ Interest,” features research and input from a variety of infectious diseases experts including commentary from ARLG’s Laboratory Center Director, Robin Patel, MD and ARLG investigator, Robert Schooley, MD. The article, which discusses the development of phage therapy from the 1915 discovery of bacteriophages to now, also references ARLG’s PHAGE Study and the ARLG Phage Taskforce report, “Considerations for the Use of Phage Therapy in Clinical Practice.”

The JAMA article details how the effectiveness of phages—bacteria-infecting viruses—has been questioned since penicillin was found to be a safe, effective treatment for bacterial

infections. Since antimicrobial resistance continues to grow, phage therapy is gaining attention as a potential solution to drug-resistant bacterial infections. Between 2016 and 2017, the National Institutes of Health (NIH) quadrupled funding for phage research to $160 million.

Read more

ARLG Spotlight — Ahmed Babiker

Ahmed Babiker, MBBS, MSc.
Assistant Professor, Dept of Medicine, Division of Infectious Diseases
Emory University School of Medicine

About my role in the ARLG

I received ARLG's Early Faculty Seedling Award to study how novel microbiome-based approaches lead to multidrug-resistant organism (MDRO) decolonization. Using combined anaerobic culturing and next generation sequencing, my team and I are working to identify the specific taxa that confer long-term MDRO decolonization among fecal microbiota transplantation (FMT)-treated individuals. In addition, we are working to establish a strain biobank to support the development of novel microbiome diagnostics and therapies for MDRO decolonization.

About my research

An overarching theme of my clinical and research interests is utilizing -omics techniques to directly address challenges posed by antimicrobial resistance (AMR). My research interests include the clinical and molecular epidemiology of MDROs within healthcare and low- or middle-income country settings, the role of the microbiome in colonization resistance, and the integration of novel diagnostics and -omics technology into clinical microbiology workflows.

Why is this research important?

As ARLG's scientific agenda indicates, the current landscape of AMR and the antibiotic pipeline have created a critical need for new therapies. Microbiome therapeutics, such as FMT, offer a novel approach to improve dysbiotic microbiome states associated with MDRO colonization. While mounting evidence indicates that FMT is effective at eradicating MDRO intestinal colonization, the precise mechanisms by which FMT reduces MDRO colonization and enhances long-term colonization resistance are not well elucidated. To realize the full potential of microbiome therapies, more work is needed to

determine the ecological dynamics that lead to long-term MDRO decolonization.

Read More

ARLG Early Stage Investigator (ESI) Seed Grants

As part of our mission to mentor the next generation of researchers and foster diversity in the field of antibacterial resistance (AR), ARLG offers grant opportunities to help early stage investigators (ESI) develop preliminary data and apply for additional external funding. Individuals who are MD, PhD, or PharmD students, graduate or post-graduate trainees, or those with a faculty appointment of less than five years are eligible to apply for ESI Seed or EVERYONE Grants:

- **ESI Seed Grants** offer up to $50,000 in direct costs for one year for research in areas related to AR within the ARLG scope.
- **Early Stage Investigator Program Promoting Diversity in Antibiotic Resistance Research (EVERYONE) Grants** aim to foster diversity in the field of AR. Each year, ARLG will award up to two EVERYONE investigators up to $50,000 in direct costs for research in areas related to antibacterial resistance within the ARLG scope. EVERYONE investigators should be from underrepresented populations in the extramural scientific workforce as defined by the National Institutes of Health (NIH).

Infectious Diseases fellows at the 4th or 5th year of fellowship, as well as individuals with an MD or PhD in any discipline, with a faculty appointment of less than five years are eligible to apply for the Early Faculty Seedling Award.

- **Early Faculty Seedling Award** provides 50% of current salary support per year for protected research for up to two years and up to $25,000 in direct costs for research over the two years.

Read more

MASTERMIND BSI
Antibacterial Resistance Leadership Group

New Opportunity!
MASTERMIND BSI Study
Clinical Events Committee Reviewer

We are soliciting individuals interested in the opportunity to join the MASTERMIND BSI study as a Clinical Events Committee reviewer. This is a multi-center cross-sectional observational clinical platform study to evaluate the diagnostic accuracy of multiple experimental in-vitro rapid diagnostic testing panels for detection of microorganisms directly from blood.

Scope of the study:

- CEC members will adjudicate the overall infection status for each patient based on standard of care microbiology results and other clinical information as proven, probable, possible or no BSI. The primary objective is to evaluate the negative percent agreement for identification of individual microorganisms by the investigational test compared to standard of care blood cultures
- Adjudication period: Sep/Oct 2023 – Nov 2025
- Approximately 25-35 hours of committee meetings per reviewer
- All events will be reviewed in full committee consisting of 3 reviewers. Committee meeting participation will be in a rotating fashion (availabilities are confirmed ahead of time)
- Events will be assigned to reviewers prior to the meetings for pre-review and preparation
- Adjudication Platform: Zelta from Merative (formerly IBMCD)
- Number of CEC Reviewers for the entire trial: 6-8
- $125 / 15 minutes per committee meeting (common meeting duration is 1-2 hours per meeting).

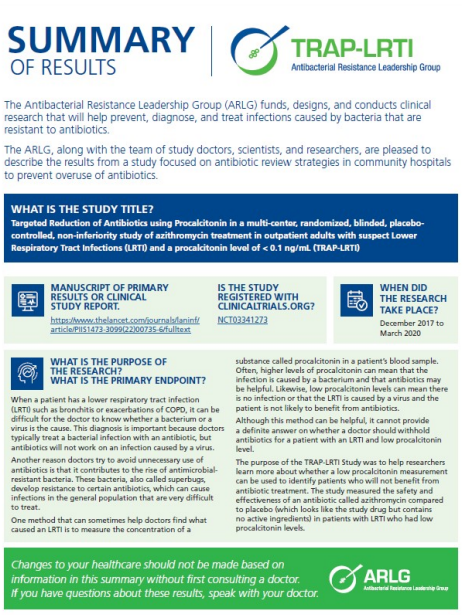
If you are interested in the opportunity, please provide your CV directly to the CEC PI: Dr. Tim Jenkins at Timothy.Jenkins@dhha.org.

Apply now

TRAP-LRTI Study Summary Now Available!

A lay summary of results has been posted for the Targeted Reduction of Antibiotics using

Procalcitonin in a multi-center, randomized, blinded, placebo-controlled, non-inferiority study of azithromycin treatment in outpatient adults with suspect Lower Respiratory Tract Infections (LRTI) and a procalcitonin level of < 0.1 ng/mL (TRAP-LRTI) studies.


SUMMARY OF RESULTS

TRAP-LRTI
Antibacterial Resistance Leadership Group

The Antibacterial Resistance Leadership Group (ARLG) funds, designs, and conducts clinical research that will help prevent, diagnose, and treat infections caused by bacteria that are resistant to antibiotics.

The ARLG, along with the team of study doctors, scientists, and researchers, are pleased to describe the results from a study focused on antibiotic review strategies in community hospitals to prevent overuse of antibiotics.

WHAT IS THE STUDY TITLE?
Targeted Reduction of Antibiotics using Procalcitonin in a multi-center, randomized, blinded, placebo-controlled, non-inferiority study of azithromycin treatment in outpatient adults with suspect Lower Respiratory Tract Infections (LRTI) and a procalcitonin level of < 0.1 ng/mL (TRAP-LRTI)

MANUSCRIPT OF PRIMARY RESULTS OR CLINICAL STUDY REPORT
https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(22)00735-6/fulltext

IS THE STUDY REGISTERED WITH CLINICALTRIALS.ORG?
NCT03341273

WHEN DID THE RESEARCH TAKE PLACE?
December 2017 to March 2020

WHAT IS THE PURPOSE OF THE RESEARCH? WHAT IS THE PRIMARY ENDPOINT?

When a patient has a lower respiratory tract infection (LRTI) such as bronchitis or exacerbations of COPD, it can be difficult for the doctor to know whether a bacterium or a virus is the cause. This diagnosis is important because doctors typically treat a bacterial infection with an antibiotic, but antibiotics will not work on an infection caused by a virus.

Another reason doctors try to avoid unnecessary use of antibiotics is that it contributes to the rise of antimicrobial-resistant bacteria. These bacteria, also called superbugs, develop resistance to certain antibiotics, which can cause infections in the general population that are very difficult to treat.

One method that can sometimes help doctors find what caused an LRTI is to measure the concentration of a substance called procalcitonin in a patient's blood sample. Often, higher levels of procalcitonin can mean that the infection is caused by a bacterium and that antibiotics may be helpful. Likewise, low procalcitonin levels can mean there is no infection or that the LRTI is caused by a virus and the patient is not likely to benefit from antibiotics.

Although this method can be helpful, it cannot provide a definite answer on whether a doctor should withhold antibiotics for a patient with an LRTI and low procalcitonin level.

The purpose of the TRAP-LRTI Study was to help researchers learn more about whether a low procalcitonin measurement can be used to identify patients who will not benefit from antibiotic treatment. The study measured the safety and effectiveness of an antibiotic called azithromycin compared to placebo (which looks like the study drug but contains no active ingredients) in patients with LRTI who had low procalcitonin levels.

Changes to your healthcare should not be made based on information in this summary without first consulting a doctor. If you have questions about these results, speak with your doctor.

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Lower respiratory tract infections are among the most common reasons for frequent health-care visits. Patients with LRTI due to either a bacterial or a viral infection have similar symptoms, which makes it difficult for doctors to identify the cause. This situation results in high rates of unnecessary antibiotic use, which contributes to the rise of antimicrobial resistance worldwide. Doctors need improved strategies to help identify which patients would not benefit from antibiotic treatment.

Researchers conducted the TRAP-LRTI Study to help answer the question of whether a low procalcitonin level means doctors can safely withhold antibiotics to treat LRTI.

Read More

Events

ARLG at ECCMID OnDemand

Many of ARLG's top leaders were on hand at ECCMID 2023 discussing the latest AMR topics with ID experts from around the world. The event took place April 15-18 in Copenhagen, Denmark and online.

Don't forget that you can still view any sessions you may have missed through the ECCMID 2023 Online Platform through October 18, 2023. Use ARLG's online guide to plan your sessions.

Learn more

Study Milestones

View recent ARLG study updates.

STEP FMT	**S**train **T**emporal **E**ngraftment and **P**ersistence after **F**ecal **M**icrobiota **T**ransplantation	Enrollment complete
MASTER-RADICAL	**Master** Protocol-**Ra**pid **D**iagnostics **i**n **C**ategorizing **A**cute **L**ung Infections	Enrollment complete Analysis in progress
INNOVATIONS QOL	Quality of life (QoL) assessments in studies of patients undergoing treatment for intra-abdominal infections, complicated urinary tract infections, skin and skin structure infections, and hospital-acquired or ventilator-associated bacterial pneumonia	Enrolling
Pneumonia DIRECT	Pneumonia Direct Pilot	Protocol development
MASTERMIND-RING	**MASTER** protocol for evaluating Multiple **In**fection **D**iagnostics- **R**es**I**stant ***N**eisseria **G**onorrhoeae*	Protocol development
GENO-STELLAR (Formerly GENO-SMART)	**GENO**mics, **S**equencing-based **T**yping, **E**pidemio**L**ogy, **L**inkage, and **A**ntimicrobial **R**esistance Tool (GENO-STELLAR)	Platform launched
MeChaTeBla	Mechanistic and structural characterization of the interaction of a novel antibiotic with clinically relevant β-lactamases	Data Analysis

Go to the ARLG Studies page for more milestones and updates!

Learn More

Recent Publications

View the following recent ARLG publications.

Tamma PD, Souli M, Billiard M, Campbell J, Conrad D, Ellison DW, Evans B, Evans SR, Greenwood-Quaintance KE, Filippov AA, Geres HS, Hamasaki T, Hopkins RJ, Komarow L, Nikolich MP, Lodise TP, Nayak SU, Norice-Tra C, patel R, Pride D, Russell J, Van Tyne D, Chambers HF, Fowler VG Jr., Schooley RT. Safety and Microbiological Activity of Phage Therapy in Persons with Cystic Fibrosis Colonized with Pseudomonas aeruginosa: Study Protocol for a Phase 1b/2, Multicenter, Randomized, Double-Blind, Placebo-Controlled Trial. 28-Dec-22. Trials. 2022 Dec 28;23(1):1057. doi: 10.1186/s13063-022-07047-5.

Reyes J, Komarow L, Chen L, Ge L, Hanson BM, Cober E, Herc E, Alenazi T, Kaye KS, Garcia-Diaz J, Li L, Kanj SS, Liu Z, Onate JM, Salata RA, Marimuthu K, Gao H, Zong Z, Valderrama-Beltran SL, Yu Y, Tambyah P, Weston G, Salcedo S, Abbo LM, Xie Q, Ordonez K, Want M, Stryjewski M, Munita JM, Paterson DL, Hill C, Baum K, Bonomo RA, Kreiswirth BN, Villegas MV, Patel R, Arias CA, Chambers HF, Fowler VG, Doi Y, van Duin D, Satlin MJ; for the the Prospective Observational POP Study Investigators and the Antibacterial Resistance Leadership Group. Global Epidemiology of Carbapenem-resistant Pseudomonas aeruginosa and Associated Carbapenemases (POP): a Prospective Cohort Study. Lancet Microbe. 2023 Mar;4(3):e159-e170. doi: 10.1016/S2666-5247(22)00329-9. Epub 2023 Feb 9.