Dr. Ian Gut

Clearance: TS/ SCI

Professional Summary

Accomplished Infectious Disease Research Scientist and Project Manager with over 18 years of specialized expertise in bacteriology, toxinology, and molecular biology. Proficient in the development of assays, capabilities, and animal models, with a strong focus on host-pathogen/toxin interactions and physiological characterization of select agents. Demonstrated history of providing critical data products and subject matter expertise to a variety of stakeholders including the U.S. Government, academic institutions, and international bodies, particularly in biodefense and high-containment laboratory operations. Adept at leading and executing complex projects, managing cross-functional scientific teams, and delivering strategic programmatic outcomes under stringent regulatory frameworks. Committed to fostering a culture of continuous improvement, collaboration, and professional growth within technical teams to meet and exceed organizational goals.

Core Competencies

Bacteriology and Toxinology Research and Assay Development, Microscopy, Molecular Biology and Cloning, Cell Biology Assays, Technical Writing and Reporting, Data Analysis – Project and Biological, Project and Program Management, Risk Management, Scientific and Technical Staff Management

Work Experience

Datalytica, Program and Technical Consultant, Dec 2023- Present

- SETA (Systems Engineering and Technical Assistance) consultant.

CACI International, Inc.

Provides subject matter expertise to the National Center for Medical Intelligence in the area of Defense Medical Intelligence and Global Health Security (DMIGHS) Analytic Support and analyzes future medical technology and its military applications.

Biologist, Subject Matter Expert and Analyst, Dec 2023 – Present

Conduct all source analysis and production to identify health-related disruptive threats and assess the impact of environmental health issues and trends on environmental security and national policy. Produce assessments projecting the discovery, development, and deployment of advanced medical technologies and their impact to Defense Critical Infrastructure that meet stakeholder requirements.

- **Generate knowledge products** in support of stakeholder requirements in healthcare and environmental biotechnology, infectious disease, and toxinology. Additionally, conduct research and author analytic products on military medical capabilities and infrastructure. Produced first knowledge product within first 2.5 months of employment rather than the anticipated 6-12 months.
- **Summarize scientific data for written and oral presentation** to government stakeholders, assessing foreign military and civilian health capabilities and enhance stakeholder understanding of biotechnology advancements.
- **Foster an environment of objective critical thinking and robust data analysis** to enable high quality and rigorous development and review of generated knowledge products.

Battelle National Biodefense Institute, National Biodefense Analysis and Countermeasures Center (NBACC), Threat Characterization

Execute projects in a high intensity and dynamic work environment to successfully meet the biological research priorities of the Department of Homeland Security (DHS), Department of Defense (DoD), and USG stakeholders, while also providing valuable subject matter expertise to inform knowledge gaps.

Senior Principal Investigator, Manager, Virology and Toxinology, Feb 2022 – Dec 2023
Document Review and Release Manager, Jun 2018 – Dec 2023
Senior Principal Investigator, Bacteriology, Sep 2013 – Feb 2022

Led cross functional research efforts within a complex stakeholder environment to support biological defense efforts at multiple biosafety levels (BSLs) and security stances. Managed all aspects of project execution and provided subject matter expertise in bacteriology, toxinology, and infectious disease research to address information gaps and deliver quality knowledge products within budget and timeline. Oversaw the execution of a company-wide program for the appropriate release and disclosure of data products.

- **Directly led 20 research projects**, supported an additional 10 efforts, and oversaw 14 research ventures totaling $20+ million in biodefense research across BSL-2, -3, and -4 environments. Develop and implement budgets, tasks, milestones, timelines, research goals, and technical proposals. Efficiently manage project activities to identify critical paths and pinch points, preventing delays in intermediate milestones to mitigate delays in project and program deliverables, ultimately resulting in the successful delivery of knowledge products. In 2019, was solely responsible for 60% of program deliverables, which resulted in the highest annual score to date for the Threat Characterization Directorate of NBACC.
- **Meet or exceed project research goals across all periods of performance.** Provide monthly, quarterly, semi-annual, annual, and ad hoc project updates internally, to stakeholders, and to the sponsor. Perform monthly reviews of project milestone status and financial burn rates and develops quarterly cost and labor estimates for project completion. Routinely support ad hoc USG taskers and requests with short turnaround times to maintain effective communication with stakeholders.
- **Execute and manage multi-disciplinary projects** across three BSLs and multiple security stances. Oversee the execution of research projects from three distinct funding streams, ensuring accurate accounting of both labor and non-labor expenditures. Manage and operate BSL-2, -3, and -4 laboratory spaces. Maintain and enhance core capabilities in cell culture, nucleic acid sequencing, protein expression and purification, virology, and toxinology. Complete all regulatory requirements to ensure a safe and productive working environment through iterative risk assessment. Quickly and reliably adapting to changing research priorities to meet sponsor needs.
- **Established 19 new capabilities and methods** within the NBACC's Threat Characterization Directorate to enhance data quality and address information gaps. Continuously ensure that capabilities can be performed safely at the appropriate BSL. Regularly oversee the procurement process for new equipment and government property to maintain all capability enhancements while ensuring adherence to all federal acquisition regulations.
- **Dedicated leader, mentor, personnel coach, and staff manager** who consistently strives to enhance employee career development and experience. Twenty-two staff members have received mentorship aimed at increasing their research and project management skill sets, resulting in the promotion of four individuals. Established and fostered clear and productive channels of communication with project members and direct reports to enable programmatic success in both individual and team atmospheres.

- **Manage and oversee the appropriate public and government only distribution of knowledge products and actively participate as a member of the Institutional Safety Committee.** Developed company-wide training courses to ensure reliable adherence to contractual and legal requirements, effective content review, and adherence to regulatory requirements. Enhanced the program to support the expanding scope of knowledge products (e.g., computer code and instrument data logs). Support critical review of safety incidents and successes as part of a multi-disciplinary committee to identify lessons learned and enhance the biological and chemical safety posture.

U.S. Army Medical Research Institute of Chemical Defense, Jul 2011 – Sep 2013

Completed two post-doctoral fellowships at USAMRICD performing in vitro biological research on toxin and nerve agent exposures, resulting in five publications.

National Research Council - Chemical Biological Defense, Post-Doctoral Research Fellow, Mar 2012 – Sep 2013

Oak Ridge Institute for Science and Education, Post-Doctoral Research Fellow, Jul 2011 – Mar 2012

As a Post-Doctoral Research Fellow, performed research to establish models of neuronal intoxication that resulted in the award of the National Research Council-Chemical Biological Defense Post-Doctoral Fellowship, funded by the Defense Threat Reduction Agency.

- **Developed a mouse embryonic-derived neuron cell culture model** and associated techniques to assess glutamate-induced neurotoxicity and Botulinum neurotoxin mechanism of action. Supervised, mentored, and trained five undergraduate and post-baccalaureate students in the safe handling of toxins, laboratory methods, and diagnostic assays.
- **Evaluated mechanisms of excitogenic neuronal death**, neuron survival, and neuroplasticity within a mouse embryonic-derived neuronal model.
- **Established a next generation sequencing method** as an alternative technique to quantitatively analyze RNA-sequencing data specifically for high abundance transcripts. This alternate method complemented the traditional fold-change analysis originally developed for microarrays.
- **Generated proposals and grant applications** for funding via academic and government agencies, resulting in the award of a National Institutes of Health grant and NRC Chemical Biological Defense fellowship.
- **Summarized scientific data for oral and poster presentations** to professional audiences and developed abstracts and manuscripts for publication in refereed scientific journals.

University of Illinois – Urbana/ Champaign

Performed bacterial cell biology and physiological research on Bacillus anthracis Sterne to elucidate the mechanisms by which the antimicrobial peptide nisin inhibits spore germination and reduces bacterial burden during in vitro infections.

Research Scientist, Mar 2011 – Jun 2011

Graduate Student, Doctoral Candidate, and Project Manager, Aug 2005 – Mar 2011

- **Established six laboratory assays** to characterize the cellular and growth consequences of *Bacillus anthracis* exposure to nisin during spore germination and outgrowth. Performed structure activity relationship studies between nisin variants and *Bacillus anthracis* to elucidate the mechanism of inhibition. Determined that nisin inhibited spore outgrowth via lipid II and two inhibitory activities – the inhibition of cell wall biogenesis and pore formation.
- **Identified that nisin is protective during in vitro infection of mammalian immune cells** and aided in spore clearance for infected mouse macrophages and dendritic cells.

- **Evaluated the impact of cell culture media on *Bacillus anthracis* spore germination** to ensure that spores remained dormant prior to cellular uptake, thus eliminating confounding results during in vitro infections.
- **Trained and mentored seven undergraduate and graduate students in the laboratory** to ensure that research objectives were carried out safely and within established timelines. Provided guidance and support to students and graduate colleagues in developing their scientific work and laboratory safety. Coordinated laboratory acquisitions with the principal investigator to ensure adherence to laboratory and project budgets.
- **Summarized scientific data for oral presentation to professional audiences** and developed written summaries and manuscripts for public Received DHS S&T Undersecretary's Award in 2018 and 2019 for scientific contributions to biothreat hazard characterization and critical COVID-19 response efforts, respectively.

Awards

- Received DHS S&T Undersecretary's Award in 2018 and 2019 for scientific contributions to biothreat hazard characterization and critical COVID-19 response efforts, respectively.
- Received NBACC's William Patrick Award for outstanding contributions to biodefense research.
- Received three NBACC Outstanding Performance Awards for accomplishments above and beyond program requirements.
- Received an American Society for Microbiology Student Travel Grant recognizing academic research presented at the annual conference.

Publications and Presentations

- Authored nine peer reviewed publications. (Available Upon Request)
- Presented at over 40 lectures at academic meetings, conferences, and workshops.
- Presented at over 60 posters at academic meetings, conferences, and workshops.

Education

University of Illinois, Doctor of Philosophy (PhD), Microbiology, Urbana, IL
University of Illinois, Master of Science (MS), Microbiology, Urbana, IL
Benedictine University, Bachelor of Science (BS), Biology, Lisle, IL