

Dr. Sheldon George Bruno Waugh
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Middle River, MD, 21220 United States
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Availability:

Job Type: Permanent

Work Schedule: Full-Time

Desired locations:

Work Experience:

U.S. Department of Commerce, Office of the Inspector General

1401 Constitution Avenue N.W., 401 W.,
Washington, DC 20230 United States

06/2023 – Present

Salary: 132,368.11 USD Per Year

Hours per week: 40

Series: 1530 **Pay Plan:** GS **Grade:** 14

Lead Data Scientist (This is a federal job)

TOP SECRET Security Clearance (granted December 2020)

Duties, Accomplishments and Related Skills:

- Chief and principal data scientist for the DOC OIG.
- Leads the Data Analytics team in conducting data science research and projects that make informed projections, data-driven decisions, and recommendations based on findings.
- Developed and maintained an ArcGIS Online-based mapping and analysis dashboard to track broadband availability and progress, supporting the Department of Commerce Office of Inspector General's mission to ensure efficient and effective broadband infrastructure deployment. Utilized Python and data from the FCC and NTIA to identify unserved and underserved areas, monitor the impact of federal funding, and visualize key metrics for stakeholders.
- Participated in CIGIE and Pandemic Response Accountability Committee (PRAC) analytics and data sharing pilot utilizing Entity recognition and a unified, open analytics platform for building, deploying, sharing, and maintaining enterprise-grade data, analytics, and AI solutions at scale. Collaborated with external AI partners and open sources to integrate high-level Machine Learning technologies and methods successfully.

- Created, Developed, and Sustained 3 ArcGIS Online Dashboards within the DOC OIG ArcGIS Online Organization environment, including PRAC PPP Loan usage, NOAA Hurricane Errors, and IJJA Broadband deployment. Developed, drafted, and executed an advanced script that utilized web scraping and API usage to collect Geospatial metadata from the Department of Commerce relating to the Geospatial Data Act. 30 GBs of data were collected and processed using R and Python scripts.
- Prepare, process, and transform structured and unstructured data and apply advanced scientific, mathematical, and statistical principles and theories to new and existing data sources using open-source or proprietary programming languages. Apply data science methods and techniques, including statistical analysis, modeling, machine learning, spatial analysis, and Natural Language Processing (NLP).
- Builds, manages, and automates complex data pipelines to support ongoing analytics that develop proactive leads. Engineer and deploy interactive dashboards and analytic tools for agency-wide use.
- Developed and recommended the Data Etiquette Guidelines for the Department of Commerce, Office of the Inspector General (DOC OIG). The DOC OIG Data Analytics Branch developed these guidelines to provide a foundation of best practices for curating data from server-based databases for reports, visualizations, and analyses.
- Developed a proposal to the Technology Modernization Fund to implement Natural Language Processing on large corpora of grant documentation and unstructured text to identify potential pass-through schemes. Additionally, proposed utilizing generative AI to create an internal chatbot, summarizing large amounts of state broadband deployment documents and files into manageable summaries for investigators.

U.S. Census Bureau

4600 Silver Hill Road
Suitland, MD 20746 United States

01/2021 – 06/2023

Salary: 110,383.00 USD Per Year

Hours per week: 40

Series: 1530 **Pay Plan:** GS **Grade:** 13

Data Scientist (This is a federal job)

TOP SECRET Security Clearance (granted December 2020)

Duties, Accomplishments and Related Skills:

- Provided expertise in the applications of data science (interdisciplinary analytical, statistical, and programming skills) to develop data-driven solutions for complex business challenges.
- Led an audio-related natural language processing project in collaboration with the field of social, economic, and housing statistics division. Coordinated access to Computer Audio Recorded Interview (CARI) Interactive Data Access (CIDA) system to download multiple years of SIPP interview data. Successfully submitted and approved Python package Transformers through the Standards Working Group for access to open-source machine learning models through HuggingFace, an AI Repository.
- Led and established the development of front-facing ESRI Mapper dashboards, maps, and tools for the American Housing Survey (AHS) and the National Health Interview Survey (NHIS), an initial and essential part of the Field Quality Monitoring Program, stood up by the Office of Census Analytics (OSCA).
- Led and established the development of front-facing Tableau dashboards for the American Housing Survey (AHS), an initial and essential part of the Field Quality Monitoring Program (FQM), stood by OSCA. Worked as senior administrator of OSCA's Tableau Server, a cloud-based server, responsible for creating and managing the site's users and groups, creating projects to organize content on the site, and assigning permissions to allow users (groups) to access the content.
- Assisted in developing Item Nonresponse (INR) metrics for the AHS and NHIS. Utilized retrospective data to estimate and validate metrics and metric distributions for future analyses.
- Led the development of coding solutions for outlier and anomaly detection for Field Representatives and Field Supervisor Areas using AHS INR data. Researched and utilized novel coding methodologies using Python and R and integrated them within the US Census Bureau survey database infrastructure.
- Coordinated and collaborated with personnel primarily focused on data engineering to develop schemas and tables to calculate metrics for anomaly detection. The Census Bureau's Unified Tracking System's (UTS) data warehouse was used to extract, transform, and load tables for metrics calculations.

- Developed extensive documentation of outlier/anomaly detection and metric development in Jupyter Notebooks, providing a clear and robust work trail from data extraction, transformation, analysis, and visualization.
- Developed and managed a Division-level Red Hat Enterprise Linux server environment to automate queries, metric calculations, data uploads, and visualizations. Served as the SAS Server Administrator for the division, responsible for maintaining the server with updates and hotfixes.
- Consulted, assisted, and led data quality, visualization, and engineering standards of census survey data, including designing and developing ETL pipelines and visualization guidelines on all BI platforms (Tableau and Power BI).

U.S. Army Public Health Center

8252 Blackhawk Rd

Aberdeen Proving Ground, MD 21010, United States

06/2018 – 01/2021

Salary: 90,398.47 USD Per Year

Hours per week: 40

Series: 0601 **Pay Plan:** GS **Grade:** 11/12

Epidemiologist (This is a federal job)

TOP SECRET Security Clearance (granted December 2020)

Duties, Accomplishments and Related Skills:

- Served as the head epidemiologist and technical expert in the Veterinary One Health Division of the U.S. Army Public Health Center. I worked on epidemiology and surveillance of military and beneficiary animal populations, including zoonotic diseases, infectious illnesses, injuries, and occupational health. Focused on human biosurveillance through a One Health paradigm.
- Served on the APHC COVID-19 Task Force Team within the knowledge management (KM) section, which was awarded the Army Medicine Annual Wolf Pack Award for FY21. Assisted in developing a searchable COVID-19 KM system to catalog content from multiple scientific communities, providing information to the community and supporting the Army's vaccine communication campaign. Served as modeling liaison for mathematical modeling team, measuring specific interventions with the spread of COVID, that worked with Army Futures Command and Lawrence Livermore National Laboratory.
- Utilized coding languages like R, Python, VB, SAS to extract, transform, and load data streams for public health surveillance across three continents. Used machine learning and AI to design outbreak dashboards and developed three

visualizations showing five years of companion animal disease surveillance data totaling over 3 GBs. Established ETL scripting pipelines to manage data efficiently and reduce errors.

- Planned, utilized, and maintained advanced analytical Dashboards in Tableau and ESRI ArcGIS to illustrate the zoonotic burden of disease within the Department of Defense's Companion Animal Population across multiple continents. Additionally, I established a multi-year collaboration with Banfield Pet Hospital, leading to a US-wide catchment area project comparing zoonotic disease rates between Banfield and DOD companion populations, and produced enterprise-level dashboards on Tableau Server.

- Planned and executed multiple epidemiological projects to identify population-based risk factors for zoonotic disease, infections, acute or chronic illnesses, injuries, and occupational hazards. Seven project proposals were written and approved by an organization-wide public health review board. Published two papers in major journals.

- Developed and Led a initiative to improve data infrastructure capabilities for VSPHS personnel, including data governance, management, science, statistical modeling, and machine learning. This involved capacity-building, strategic planning, budgeting, project management, and collaboration with senior leaders. Facilitated the development of internal data policy, and established collaborations for computing resources and visual interventions for data etiquette.

- Principal Investigator of a \$350K grant aimed at integrating high-performance computing, deep and machine learning, and artificial intelligence within the Army Veterinary Services to improve surveillance of companion animal diseases within the DOD. The project involved collaborating with Stanford University to utilize natural language processing and neural networks for reading veterinary records and applying diagnostic codes. The goal was to enhance surveillance capabilities and set a precedent for incorporating artificial intelligence into public health surveillance activities within the DOD. We developed scripts and subroutines using R and Python to process over 3K veterinary electronic clinical notes and plan to expand to over 30 GBs of DoD veterinary electronic clinical notes. We also navigated through the Defense Health Agency's HealthIT governance to obtain DOD EHR data for companion animals.

- Led a Directorate-wide data governance initiative to develop a comprehensive data dictionary that details the structure, information, and access issues for every data source routinely used by APHC personnel. Involves strategic planning, budgeting, project management, and coordination with senior leaders throughout APHC and DOD. The project also involves providing context and recording

information regarding information management. Supervised the execution and sustainment of a large-scale dataset and data filed/variable metadata collection effort.

- Served as Chief scientist and co-project manager for GPAWSS. GPAWSS is a platform designed to provide surveillance data to inform commanders and VCOs of various companion animal diseases' distribution, frequency, and incidence. The platform uses multiple heterogeneous data streams, including Remote Online Veterinary Record (ROVR) EHR data, laboratory data, and data from a civilian corporate companion animal practice.
- Developed the public health surveillance data infrastructure, establishing the framework for data integration from multiple sources within and outside the Army Public Health Center. Created, sustained, and improved data-driven visualizations and dashboards to display critical GPAWSS measures and statistics.
- Served as Knowledge Management Officer and Modeling Liaison for the APHC COVID-19 Task Force. Developed and maintained a COVID-19-related taxonomy to categorize, collate, and organize tasks, requests, and responses made by the Task Force.
- Served as the advisor and special assistant to the Division Chief for Veterinary One Health. Managed the Military Working Dog (MWD) centralized data repository and veterinary medical biosurveillance operations for the military and beneficiary animal populations. Functioned as the contracted product lead for the One Health centralized MWD data initiative, consolidating all MWD data sources into one combined data system through collaboration with key stakeholders to create a new epidemiologic database.
- Produced 13 reviewed presentations and 18 reviewed written documents within the Division for dissemination within military medical community channels; wrote two technical guidance documents for veterinary medical data management and surveillance, relating to data management, spatial data management, zoonotic disease surveillance, machine learning, and potential modeling.
- Prepared and accepted six abstracts for presentation at major scientific professional meetings and symposia for the American Public Health Association, Association of Veterinary Informatics, International Society of Disease Surveillance, The Military Health System, and the World One Health Congress. Attended six meetings, conferences, and symposia with representatives of other government agencies, private industry, and educational and research institutions as a technical liaison and APHC representative.

- Served as the Veterinary Liaison for the Digital Health Strategic Initiative. A program aimed at improving the data governance footprint of the US Army Public Health Center among the federal government.

Supervisor: MAJ Sara Luciano (410-417-4038)

Okay, to contact this Supervisor: Yes.

05/2017 - 08/2017

Hours per week: 10

SMART Scholar/Graduate Research Assistant

Duties, Accomplishments and Related Skills:

- Involved in Institutional Review Board-approved studies on infectious diseases, injuries, and psychological/behavioral health problems among university students. Worked on querying electronic medical records, data cleaning, and analysis to identify disease trends and risk factors. Additionally, I prepared manuscripts for scientific journals and presented to students, professors, and community members.

This work was done in addition to full-time (40 hours/week) duties at the Army Public Health Center (below)

Supervisor: Robert Cook (cookrl@ufl.edu)

Okay, to contact this Supervisor: Yes.

Spatial Epidemiology & Ecology Research Laboratory, Department of Geography, University of Florida

2055 Mowry Road

Gainesville, FL, 32610 United States

03/2017 - 06/2018

Salary: 32,000.00 USD Per Year

Hours per week: 40

Bioinformatician and Consultant

Duties, Accomplishments and Related Skills:

- As a bioinformatics analyst and developer, managed passive surveillance data for genomic and spatial analysis and modeling, developed specialized software pipelines, and collaborated with international health organizations and the Walter Reed Army Institute of Research (WRAIR). Work involved creating data algorithms and using R, Python, and Github for spatial phylogenetic analysis. Provided crucial bioinformatics-related information to support the country of Kazakhstan.

Supervisor: Jason Blackburn (3252783232)

Okay, to contact this Supervisor: Yes.

Emerging Pathogens Institute, Department of Epidemiology, University of Florida

2055 Mowry Road

Gainesville, FL, 32610 United States

08/2014 - 05/2018

Salary: 32,000.00 USD Per Year

Hours per week: 10-40

Bioinformatician and Consultant

Duties, Accomplishments and Related Skills:

- Bioinformatics analyst and developer in metagenomics, methylation, and genomic analyses.

Supervisor: Volker Mai ()

Okay, to contact this Supervisor: Yes.

Education:

University of Florida Gainesville, FL United States

Doctorate 05/2018

Credits Earned: 124 Semester hours

Major: Epidemiology

University of Florida Gainesville, FL United States

Master's Degree 05/2014

Credits Earned: 36 Semester hours

Major: Geography

University of Florida Gainesville, FL United States

Bachelor's Degree 12/2011

Credits Earned: 138 Semester hours

Major: Geography

Job-Related Training:

2012 - Security+

2014 - Summer Institute for Statistics and Modeling of Infectious Diseases

2015 - Dynamical Approaches to Infectious Disease Data
2018 - Lean Six Sigma—Yellow Belt

Affiliations:

Association for Veterinary Informatics - Member, Education Committee
The National Association of County Health Officials - Member
American Public Health Association – Member
 One Health Special Interest Group - Treasurer
AMSUS - The Society of Federal Health Professionals - Member

Military Experience:

Headquarters Company, 302nd Maneuver Enhancement Brigade, Chicopee, Massachusetts, United States Army Reserve, Major, Signal Corps

- Brigade Sexual Harassment/Assault Response and Prevention (SHARP) Victim's Advocate (May 2024 - Present)
- Brigade S6 (January 2021 – Present)
- Network Operations Officer (September 2018 – January 2021)

842nd Signal Company, Milton, Florida, United States Army Reserve, Captain, Signal Corps

- Company Commander (September 2015 – 2018)
- Family Readiness Group Liaison (January 2015 – 2018)
- Company Executive Officer (September 2013 – 2015)
- Platoon Leader (December 2011 – 2013)

Awards:

- Department of Commerce Bronze Award, US Census Bureau, Department of Commerce (September 2023)
- Director's Award for Innovation, US Census Bureau, Suitland, MD (April 2022)
- Army Commendation Medal, U.S. Army Reserve, Chicopee, Massachusetts (February 2022)
- Army Commendation Medal, U.S. Army Reserve, Milton, Florida (October 2019)
- Honorable Mention, Student Research Abstract Award, SHES/APHA Annual Meeting (November 2016)
- SMART Scholarship, Department of Defense, Washington D.C. (August 2016 - May 2018)
- McKnight Fellowship, Florida Education Fund, Orlando, Florida (August 2014 - May 2018)
- Ryan Poehling Fellowship Award, University of Florida (December 2013 - May 2014)
- Army Achievement Medal, U.S Army Reserve, Milton, Florida (June 2014)

- Army Achievement Medal, U.S Army Reserve, Milton, Florida (December 2013)
 - LTC Samuel W Anderson Scholarship, University of Florida (December 2009 - May 2011)
 - 1LT Mark T Barrett Memorial Award, University of Florida (May 2009 - May 2010)
 - Gold Scholarship, University of Florida (August 2007)
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