AHMED ASKAR, Ph.D, MPH, PMP

Spatial-Temporal Scientist, Program Manager

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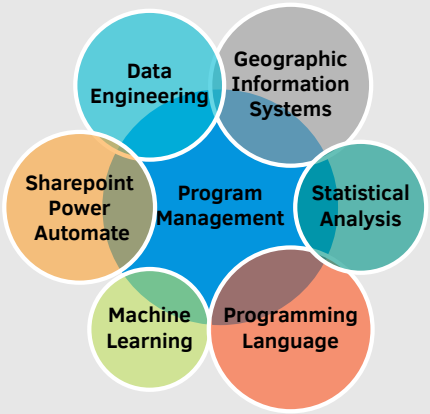
Skills



Programming

Beginner ——→ *Advanced*

Python • LaTeX

MATLAB • SQL • R

Arcade • CSS • HTML5 • JavaScript

GIS and Statistical Software

ArcGIS ★★★★★
QGIS ★★★★☆
GeoServer ★★★★☆
PostGIS ★★★★☆
Tableau ★★★★☆
Power-BI ★★★☆☆

Project Management

Agile/Scrum ★★★★★
Analytical Thinking ★★★★★
Process Improvement ★★★★☆
Vendor Management ★★★★☆

Language

Somali ★★★★★
Arabic ★★★☆☆
Urdu/Hindi ★★☆☆☆

Summary

Interdisciplinary Scientist with 13+ years at the FDA, bringing deep expertise in predictive modeling, data science, and public health surveillance to advance analytical capabilities. I've led high-impact projects transforming raw data into actionable insights and optimizing resource allocation. Notably, I developed an Inventory and Pre-Workplanning Application, integrating consumer complaints and recalls data to streamline FDA inspection planning. I have also built predictive models for natural hazard surveillance and adverse event detection, supporting FDA officers in prioritizing high-risk inspections.

Holding a PhD in data mining, my research focused on spatio-temporal surveillance of adverse events, utilizing machine learning to uncover safety signal patterns across FAERS and VAERS data. These insights inform proactive risk management and are recognized through citations in peer-reviewed journals. I'm also adept with advanced tools such as Python, Tableau, and Power BI, translating complex data into clear visualizations for technical and non-technical stakeholders alike.

Currently, I lead program management innovations within the FDA, automating request processes with Power Automate and developing SharePoint-based task management systems. My commitment to expanding data science accessibility has led to office hours and training sessions, increasing organizational engagement. Skilled in data management and governance, I mentor staff across technical areas, aligning analytics with organizational goals.

My collaborative approach has earned multiple awards, including a Commissioner's Special Citation for contributions during the COVID-19 pandemic. I am confident that my blend of technical acumen, leadership, and public health insight will drive impactful data science advancements within your team.

CORE COMPETENCIES

1. **Scientific, Regulatory, and Technical Expertise -** Extensive experience in public health surveillance and signal detection, with a proven ability to apply technical methodologies for accurate reporting and triaging. Adept at ensuring the appropriate teams are engaged in program activities to achieve optimal outcomes.
2. **Data Management -** Proficient in data warehousing, mining, and management tools. Develops data systems for post-marketing surveillance and signal detection using Python and advanced modeling techniques.
3. **Leadership & Supervision -** Skilled in managing multidisciplinary teams, defining roles, setting milestones, and providing guidance for optimal performance and alignment with organizational goals.
4. **Project & Program Management -** Over a decade of success managing complex projects, including data-driven applications, and public health response initiatives.
5. **Communication & Collaboration -** Effective in coordinating cross-functional teams, facilitating communication, and maintaining strategic relationships to promote FDA / OII mission.
6. **Innovative Solutions -** Expert in developing innovative workflows, geospatial systems, and hazard surveillance models to improve efficiency and decision-making.

Selected Ongoing / Completed Projects

- **Inventory and Workplanning Applications for OII Programs Length of time performing this project/Lead**: 15 months / Dr. Ahmed Askar
  Developed a comprehensive data-driven application using Python and COTS software for the Animal Food Inspectorate (AFI), Human Food Inspectorate (HFI), and Office of Biologics Inspectorate (OBI). The system efficiently maps the inventory of regulated industries for inspection and integrates critical datasets such as consumer complaints, recalls, and firm information. Additionally, it incorporates staff locations and training completion across each program, enabling work planners to seamlessly assign qualified personnel to inspections based on expertise and availability, significantly optimizing the inspection planning process.

- **FDA Firm's Location Risk Assessment Surveillance Model for Natural Hazards Length of time performing this project/Lead**: 7 years / Dr. Ahmed Askar
  Developed a Python-based system to crawl and curate open data feeds from federal agencies, integrating probabilistic spatial models to identify impacted versus non-impacted FDA-regulated firms for natural hazard surveillance. The system uses active and passive databases to analyze proximity to hazards and presents findings through a web application on ArcGIS Web Portal. These insights assist FDA compliance and emergency response officers in prioritizing and managing inspections, both routine and ad hoc.

- **Spatio-temporal data mining on adverse events related to pharmaceutical drugs, vaccines and consumer complaints Length of time performing this project/Lead**: 6 years / Dr. Ahmed Askar
  Used various machine learning algorithms such as frequent itemset mining, lda and spatial statistics for risk model analytic to generate signal detection of co-occurring adverse events and their sematic topics, which helps SMEs in determining adverse events influence from spatial and temporal factors and to generate a link between the spontaneous adverse event database(FAERS, VAERS, CAERS) and pharmaco-epidemiological studies. **(See publication section)**

- **Infant Formula National Shortage - Equity Analysis Length of time performing this project/Lead**: 10 months Incident Commander Frank Yiannas
  Led the geospatial analysis for a joint White House, USDA, and FDA project on equitable infant formula distribution. Developed a multidimensional clustering method to prioritize WIC retailers, focusing on areas with high population density, food deserts, and low supply. This approach was designed to assist distribution teams and decision-makers. Received a Commissioner's Special Citation Award for enhancing the safety and supply of infant formula through spatial science and machine learning. 🏆

- **COVID-19 FDA Advisory Level Inspection Overview Length of time performing this project/Lead**: 3 years / Incident Commander Capt Josh Simms
  Initial data team/lead that developed the FDA Advisory Level spatial model for COVID-19. This qualitative model provided insights into the status of outbreaks across counties and states, helping FDA inspection work-planning decision makers. In March 2022, the FDA adopted the CDC's COVID-19 Community Level for work-planning. I developed a Python script to automatically retrieve CDC data, which is hosted on FDA GeoWeb for easy access by FDA teams, including work-planning. For this work, I received a Commissioner's Special Citation Award and a Group Award in recognition of my contributions to the FDA's COVID-19 response. 🏆

- **Emergency Risk Assessment for FDA Investigators and FDA buildings in proximity to Natural Hazards Length of time performing this project/Lead**: 5 years / Dr. Ahmed Askar

- **East Palestine, Ohio Train Derailment FDA Incident Management Group (IMG) Response Length of time performing this project/Lead**: 2 months / Incident Commander Dr. Donald Prater

Experience

October 2023 - Present

GeoSpatial & Data Science Program Lead (Salary: Title 21 AD-C2 - 40hrs/week) Division of Work Planning and Analytic (DWPA), Office of Inspections and Investigations (OII), Department of Health and Human Services, Food and Drug Administration

- Recipient of Certificate of Commendation. Recognized for exceptional support of the Office of Emergency Management's mission to coordinate emergency preparedness and response for FDA-regulated products and public health. 🏆
- **Developed and Implemented Automated Systems**: Spearheaded the creation of multiple **Power Automate workflows** to establish a request form for the ORA GIS program, significantly enhancing communication, task management, and workflow coordination for improved efficiency.
- **Optimized Program Management Tools**: Integrated Microsoft 360 tools such as **Tasker and Power Automate** to streamline project management by automating data in SharePoint with project lists, assignee information, and key metadata like due dates. This initiative improved real-time tracking of projects and task prioritization.
- **Promoted Program Engagement and Capacity Building**: Established **office hours** and organized **brownbag lunch and learn sessions** to promote the GIS program, increasing engagement across various teams and improving the workforce's understanding of geospatial applications for triaging.
- **Provided Geospatial and Statistical Expertise**: Acted as a **technical expert** in geospatial science and statistical planning for surveillance systems, offering insights into data patterns and data mining for work-planning datasets, including consumer complaints, recalls, staff training, and inventory.
- **Developed Analytical Dashboards**: Designed and implemented **analytical dashboards** by gathering user requirements and mapping process workflows, providing leadership with essential tools for monitoring and tracking program activities.
- **Utilized Advanced ETL Processes**: Employed **ETL processes** to ensure that large datasets were optimized for analysis and dashboard creation, enabling more efficient signal detection and public health surveillance reporting.
- **Automated Data Collection and Accuracy Improvements**: Developed automated systems for **data collection**, enhancing accuracy in identifying and triaging FDA-regulated industries affected by weather events. These systems support compliance and emergency response teams in prioritizing actions for impacted industries.
- **Established Metrics and Evaluation Goals**: Assisted in developing key **metrics and evaluation criteria** to monitor performance, focusing on time spent in investigations. This improved accountability and enabled more effective tracking of progress toward work accomplishment goals.
- **Advised on Data Management and Governance**: Provided strategic recommendations on **data management and governance** practices, including upgrading the FDA's GeoWeb portal to enhance data accessibility, integration, and usability.
- **Mentored Staff in Signal Detection and Research Design**: Guided ORA staff in **research methodologies, study design**, and dashboard development, while encouraging the use of both **open-source and commercial software** for FDA-regulated industry analysis
- **Prepared Reports for Senior Leadership and External Stakeholders**: Developed reports and presentations for **senior FDA leadership, program directors**, and external professional groups, providing insights and strategic recommendations to enhance public health outcomes.

September 2013 - October 2023

Regulatory Information Specialist / Geo-Spatial Scientist (Salary: GS-13/Step 7 - 40hrs/week) Department of Health and Human Services, Food and Drug Administration

- Recipient of Numerous Commissioner's Special Citation Award and Group award for advancing public health using spatial science, machine learning and statistics.
- Recipient of multiple awards in 2021 for developing a path forward for surveillance inspections to safely resume during the pandemic helping to ensure, for significant contribution and achievement of the rapid collaborative development of the COVID-19 FDA and for outstanding service in supporting the Food and Drug Administration response to the COVID-19 pandemic using programming to manage data, spatial modeling and analysis.
- Recipient of Gears of Government Award. I was awarded for improving how FDA responds and reacts to natural disasters and efforts to enhances FDA's ability to assess the impact of damage at facilities and ability to recover resources. For visualization i used story maps/dashboard and in the backend used spatial models automated with python and open source GIS programs / python libraries
- Recipient of Commissioner's Special Citation Award in 2017 as a member of "FDA Zika Virus Response Team" to proactively and collaboratively expediting development and availability of medical products in support of FDA's response to the Zika public health emergency using spatial science.
- Recipient of FDA Recognition Award in 2017 for outstanding efforts and collaboration using spatial epidemiology in investigating, assessing, and addressing an outbreak of Burkholderia cepacia infections associated with an FDA regulated product (liquid docusate sodium).
- Recipient of FDA Recognition Award in 2013 for exceptional contribution and outstanding dedication to the response effort in the aftermath of Hurricane Sandy using Geospatial and Remote Sensing technology.
- Recipient of Crosscutting Award in 2014 as a member of the "Compounding Inspections & Enforcement Team of 2013" for outstanding accomplishment and protecting public health from the risks associated with pharmacy compounding.
- Recipient of Commissioner's Special Citation Award in 2013 for outstanding performance and tireless dedication in using Remote Sensing / GIS tools to identify patients and hospitals efficiently in Multi-State Meningitis Outbreak and protecting the nation's public health.
- Often work in the capacity of Chief Geographer of the FDA for FDA Incident Management Group (IMG), which includes senior FDA leadership and SME across FDA to tackle complex or high priority projects such as Infant formula, COVID19, ZIKA, and Natural hazards. Support activities and participates in meetings with internal and external stakeholders including state, territorial, federal and white house officials to work on complex and high priority projects.
- Collaborate with other FDA scientist in studying the adverse effect of drugs and FDA Regulated products.
- Support activities associated with identifying, gathering data, capturing metrics for ongoing natural disasters or office investments by using computational statistics, data mining algorithms (DBSCAN, PCA, Clustering, Support Vector Machine, Naïve Bayes, Classfication, Random Forrest and Association Rule Mining) to improve public health and disseminate information to my counterparts across FDA and other Federal partners.
- Conducted spatiotemporal drug adverse events studies by using machine learning and geospatial domain knowledge to study associated rules that influence adverse events in space and time.
- Conducted studies by using remote sensing techniques and Geospatial statistics to study variables and their associated risks and influences on pathogenic growth in fruit and vegetable farms.

September 2013 - October 2023

Regulatory Information Specialist / Geo-Spatial Scientist (Salary: GS-13/Step 7 - 40hrs/week) Department of Health and Human Services, Food and Drug Administration

- Created and validated a predictive model for plant pathogens such as (E.coli, salmonella, and listeria) concerning proximity to farm animals. Used spatial statistics, data science and geostatistics tool to informed on prioritization efforts by accurately forecasting areas at greatest risk, thus enabling the most significant effect of program interventions.
- Produce weekly plans, reports, and hold Intra- and Inter-agency meetings for OEM.
- Assign, coordinate and monitor the workload of the GIS team.
- Serve as Administrator/Trainer for GeoWeb (FDA Geographic Information Portal) and provide FDA with access to spatial data and maps related to the Agency's mission.
- Provide training to a variety of users, reviewers, and managers on how to use Web GIS, and types of information available and reporting capabilities. Monitor program risks, future problems, change management, and proactively identify solutions to address them in advance.
- Coordinating and providing a wide variety of periodic and special reports, and as needed by senior managers.
- Analyze technical requirements and develop documentation regarding the acquisition of information technology, including requests for proposals (RFP) and Reviewing contractor proposals and provide recommendations concerning evaluation.
- Coordinates and participates in all stages of project development including research, design, programming, testing, and implementation.

December 2011 - September 2013

Geographic Information Specialist / Staff Fellow (Salary: $75K/Annual - 40hrs/week) Department of Health and Human Services, Food and Drug Administration

- Recipient of Commissioner's Special Citation Award in 2013 for responding to an outbreak using Imagery and Spatial technology to trace back clustered cases of Salmonella Bareilly and Salmonella Nchanga associated from restaurant to exporting country.
- Recipient of Recognition Award in 2012 for exemplary planning using Web GIS and execution of the food safety mission for the Republican and Democratic National Conventions in 2012 through the successful integration of local, state and federal resources.
- Recipient of Leveraging/Collaboration Award (2012) for maximizing the effectiveness of geospatial resources by establishing a forum to share ideas and providing direction for GIS across FDA.
- Managed, coordinate, develop, and evaluate GIS related projects to ensure that projects are appropriately scoped, planned and executed according to the Statement of Work.
- Managed webmapping portal (GeoWeb) and devolped system documentation such as concept of operations, information systems contingency plan and system security plan
- Facilitated Geographic (GIS and Remote Sensing) related discussions with the principal stakeholders such as FDA outbreak Team, FDA Center for Foods, FDA Center for Biologics and FDA Center for Human and Pet Drugs on project activities relating to scientific and technical visualization of data.
- Managed FDA GIS data; identify data discrepancies and advice on corrective action to resolve errors.
- Work with Office of Commissioner in data mining, analyzing, and data visualization regarding FDA regulated domestic and foreign drug manufacturers on Vaccine Label and Human OTC Drug Label
- Assisted FDA's ORA personnel and produced maps for the field food sanitation investigations in several events such as NATO Summit, Democratic National Convention, and Republican National Convention.

Selected Publications

Askar, A., Züfle, A. (2021, September). Clustering Adverse Events of COVID-19 Vaccines Across the United States. In International Conference on Similarity Search and Applications (pp. 307-320). Springer, Cham.

Askar, A., Zuefle, A. (2021, August). Clustering of Adverse Events of Post-Market Approved Drugs. In 17th International Symposium on Spatial and Temporal Databases (pp. 106-115).

Edwards, C. A., **Askar, A. M**., Vasko-Bennett, M. A., Arancon, N. Q. 2010. Chapter 13 Use of Aqueous Extracts from Vermicomposts or Teas in Suppression of Plant Pathogens. In Vermiculture Technology" Earthworms, Organic Wastes, and Environmental Management. Edited by C.A. Edwards, N.Q. Arancon, R. L. Sherman. Boca Raton, FL: CRC Press Taylor and Francis Group. 183-207.

Edwards, C. A., **Askar, A. M**., Vasko-Bennett, M. A., Arancon, N. Q. 2010. Chapter 14 Suppression of Arthropod Pests and Plant Parasitic Nematodes by Vermicomposts and Aqueous Extracts from Vermicomposts. In Vermiculture Technology: Earthworms, Organic Wastes, and Environmental Management. Edited by C. A. Edwards, N.Q. Arancon, R. L. Sherman. Boca Raton, FL: CRC Press Taylor and Francis Group. 209-233.

Edwards, C.A., **Askar, A. M**., Vasko-Bennett, M. A., Arancon, N. Q. 2010. Chapter 15 The Use and Effects of Aqueous Extracts from Vermicomposts or Teas on Plant Growth and Yields. In Vermiculture Technology: Earthworms, Organic Wastes, and Environmental Management. Edited by C. A Edwards, N.Q. Arancon, R. L. Sherman. Boca Raton, FL: CRC Press Taylor and Francis Group. 235-248.

Edwards, C.A., Arancon, N.Q., Vasko-Bennett, M., **Askar, A**., Keeney, G., Little, B. 2010. Suppression of green peach aphid (Myzus persicae) (Sulz.), citrus mealybug (Planococcus citri) (Risso), and two spotted spider mite (Tetranychus urticae) (Koch.) attacks on tomatoes and cucumbers by aqueous extracts from vermicomposts. Crop Protection. Vol. 29. : 80-83.

Edwards, C.A., Arancon, N.Q., Vasko-Bennett, M., Little, B., **Askar, A**. 2008. The relative toxicity of metaldehyde and iron phosphate-based molluscicides to earthworms. Crop Protection 28 (4): 289-294.

Selected Presentations

- BrownBag Lunch and Learn – OMDRHO – **Presenter/Host** (Sept, 2024 at FDA - Virtual)
- BrownBag Lunch and Learn – OPBO – **Presenter/Host** (Aug, 2024 at FDA - Virtual)
- BrownBag Lunch and Learn – OBIMO – **Presenter/Host** (July, 2024 at FDA - Virtual)
- BrownBag Lunch and Learn – OHAFO – **Presenter/Host** (June, 2024 at FDA - Virtual)
- GIS User Group Meeting – **Presenter/Host** (Monthly @ FDA - Virtual)
- FDA Geospatial Surveillance Application - Natural Hazards- **Presenter** – (Nov, 2023 at FDA)
- GIS: Supporting the FDA Contact Tracing Program- **Co-Presenter w/ Dr Gutierrez (Chief Medical Officer** - (Nov, 2022 at FDA)
- Clustering Adverse Events of COVID-19 Vaccines Across the United States- **Presenter** - (Sept, 2021 at SISAP-2021)
- Clustering of Adverse Events of Post-Market Approved Drugs.- **Presenter** - (Aug, 2021 at SSTD-2021)
- Professional Mappers by day - Superhero Mappers by night- **Presenter** - (Nov 18th, 2020 at FDA)
- Using machine learning algorithms to bridge between spatial science and epidemiology.- **Presenter** - (Nov 14th, 2018 at FDA)
- Spatial Itemset Mining - A case study using FDA's Adverse Events- **Presenter** - (Dec 16th, 2017 at HHS)
- Geo-science and Machine Learning- **Presenter** - (Nov 15th, 2017 at FDA)
- Pre-harvest Crop Assessment/Disease Risk Assessment Model- **Presenter** - (Nov 16th, 2016 at FDA)
- Geographic Movement of FDA approved drug import to the US - **Presenter** - (Mar 31st, 2016 at AAG)
- What you need to know about GIS at the FDA - **Presenter** - (Nov 14th, 2012 at FDA)

Education

09/2015-8/2022 **PhD., (Spatial Data-mining), Earth Systems and Geo-information Sciences** (GPA: 3.97/4.0) - Dissertation: A Framework to Explore Spatio-Temporal Surveillance of Adverse Events For Post Market Approved Drugs and Vaccines, **Dept of Geography and GeoInformation Science, College of Science, George Mason University**, Faifax, VA

09/2010 - 05/2013 **MPH, Master of Public Health Program** (GPA: 3.5/4.0) Master Thesis: Geographic Situation Analysis of Somalia's 2011 Famine using Spatial Analytics, **Boonshoft School of Medicine, Wright State University**, Dayton, OH

09/2003 - 12/2008 **BSc, Bachelor of Science,** Biology **College of Science, The Ohio State University** Columbus, OH

Certifications

- Project Management Certification - Project Management Professional, PMP # 1578232, active until 2028
- COR Level 2, Food And Drug Administration, active until 2026

Professional Memberships

- American Association of Geography
- Project Management Institute

Honors & Awards

- Recipient of Certificate of Commendation (FDA Office of Security Emergency Management). (2024)
- Recipient of FDA Commissioner's Special Citation Awards. (Infant Formula Shortage and Safety Response Team). (2023)
- Recipient of FDA Group Recognition(Crosscutting) Awards (COVID-19 FDA Advisory Level Team Group). (2022)
- Recipient of FDA Commissioner Awards (COVID-19 Incident Management Group). (2022)
- Recipient of FDA Group Recognition(Crosscutting) Awards (FDA Resuming Surveillance Inspection Team). (2021)
- Recipient of FDA Commissioner Awards (Vape Products Illness Injury Incident Management Group). (2020)
- FDA & ACF Geographic Information Systems Team (For collaboration across FDA and ACF to foster a strong working relationship in applying Geographic Information System techniques). (2020)
- Gears of Government Awards – Improved how FDA responds and reacts to natural disasters. This effort enhances FDA's ability to assess the impact of damage at facilities and ability to recover resources. (2019)
- Secret Service Recognition Medal – Inauguration of the 45th President of the United States. (2017)
- United States Food and Drug Administration FDA Commissioner's Special Citation Award - FDA Zika Virus Response Team. (2017)
- United States Food and Drug Administration FDA Commissioner's Special Citation Award - Burkholderia Cepacia Infections Incident Response Group. (2017)
- United States Food and Drug Administration FDA Commissioner's Special Citation Award - 2017 FDA Presidential Inauguration Coordination Group. (2017)
- Delta Omega Gamma Alpha - Honorary Society in Public Health - Wright State University. (2016)

- United States Food and Drug Administration FDA Crosscutting Award – Compounding Inspection & Enforcement Team. (2014)
- United States Food and Drug Administration FDA Commissioner's Special Citation Award - Multi-State Meningitis Outbreak Response Team. (2013)
- United States Food and Drug Administration Commissioner's Special Citation Award - Salmonella Bareilly Outbreak Response Team. (2013)
- United States Food and Drug Administration Recognition Award - Hurricane Sandy Agency Response Group. (2013)
- The United States Food and Drug Administration Recognition Award – National Political Convention. (2012)
- The United States Food and Drug Administration Leveraging Collaboration Award. (2012)
- Oak Ridge Institute for Science and Education Fellowship. (12/2011-09/2013)
- Somali Impact Leadership Award, Columbus OH. (2009)
- Ohio State Minority Scholarship Award, Columbus OH. (09/2003-12/2008)

References available upon request