



Glenn Sullivan, GISP
Senior Solution Engineer & GIS
Developer



How will your expertise solve the challenges of ...?

For over 13 years, I have applied geospatial solutions to solve complex challenges across environmental science, infrastructure planning, and risk assessment. My expertise spans GIS development, spatial analysis, and automation, enabling organizations to make data-driven decisions efficiently.

I bring a deep understanding of geospatial technology, integrating tools like ArcGIS, Python, and FME to streamline workflows, improve data accuracy, and enhance decision support systems. My work has contributed to national and municipal projects, optimizing asset management, environmental monitoring, and climate resilience initiatives.

My greatest asset is the ability to design and implement innovative geospatial solutions that save time, reduce costs, and provide actionable insights, ensuring clients can make informed and strategic decisions with confidence.

Glenn Sullivan, GISP is an award-winning GIS Developer and Senior Solution Engineer with over 13 years of experience in Geographic Information Systems (GIS), remote sensing, environmental science, data management, programming, automation, and data visualization. Glenn has worked as a GIS developer at 5 organizations learning how to integrate and apply geospatial solutions to solve a variety of complex projects and problems. Glenn is a dedicated and hardworking consultant committed to delivering high-quality, dependable solutions using the latest technology. Glenn consistently goes above and beyond to provide innovative, data-driven products and deliverables that exceed client expectations.

CREDENTIALS

Education/Training:

- B.A., Environmental Science, University of Michigan, Ann Arbor MI – (2015)
- ESRI Training Certificate - ArcGIS Enterprise: Configuring a Base Deployment – (2021)
- ESRI Training Certificate - ArcGIS Enterprise: Administration Workflows – (2025)
- ESRI Training Certificate - Configuring Branch Versioning in ArcGIS – (2022)
- ESRI Training Certificate - Creating Python Scripts for ArcGIS – (2024)
- ESRI Training Certificate - Imagery Analysis in ArcGIS Pro – (2025)
- ESRI Training Certificate - Working with Maps in ArcGIS Maps SDK for JavaScript – (2025)

Professional Registrations/Certifications:

- Geographic Information Systems Professional (GISP) Certification – (2023), Certification Number = 161655
- ESRI Technical Certification – ArcGIS API for Python Associate 2024 – (2025)
- ESRI Technical Certification – ArcGIS Online Administration 2024 – (2024)
- ESRI Technical Certification – ArcGIS Developer Foundation 2201 – (2024)
- ESRI Technical Certification – ArcGIS Pro Associate 2101 – (2024)
- ESRI Technical Certification – GIS Fundamentals Foundation 2024 – (2024)

Awards/Publications:

- United States Forest Service - 2024 Secretary's Honor Award – (2024)
- United States Forest Service - 2023 Chief's Honor Award – (2023)
- United States Forest Service - Certificate of Appreciation Award – (2023)

EXPERIENCE

Professional Summary:

- 13+ years as a GIS developer, consultant, and solutions engineer to solve complex problems and projects at 5 different organizations.
- Expertise includes GIS, remote sensing, geospatial data management, data visualization, spatial analysis, databases, programming, and automation.

Areas of Expertise:

- **GIS Software & Technology:** ArcPro, ArcGIS Online, ArcGIS Enterprise, Portal, scenes, maps, GeoServer, QGIS, attribute & geometry rules, vector data, raster data, and 3D Data.
- **Imagery & Raster Analysis:** Mosaic datasets, raster function templates & chains, Imagery Layers, Tile Layers, NumPy, time series, and caches.
- **Scripting, Automation, & App Development:** Python, ArcPy, ArcGIS API for Python, Pandas, Cursor, Arcade, FME Workbench, FME Flow, C++, Batch, and ModelBuilder.
- **Web Development:** JavaScript, HTML, CSS, ArcGIS Maps SDK for JavaScript, Calcite, ArcGIS Experience Builder, React, ArcGIS Hub Sites, and ArcGIS Instant Apps.
- **Additional ArcGIS Products:** Map Viewer, Scene Viewer, Survey123, Field Maps, Quick Capture, Flight, Drone2Map, Server, Server Manager, Web Adaptor, GeoAI, and DLPKs.
- **Database & Relational Database management Systems:** File geodatabase, Enterprise geodatabase, SQL, PostgreSQL, Microsoft Access, ArcGIS Data Store, branch & traditional versioning, Oracle, and SQL Server.
- **Visualizations:** ArcGIS Dashboards, ArcGIS Story Maps & Briefings, Tableau, Microsoft PowerPoint, Microsoft Visio, Matplotlib, Seaborn, FPDF, cartography, charts, and figures.



PROJECT EXPERIENCE

United States Forest Service (USFS), Climate Risk Viewer (CRV) – (Lead GIS Developer: 10/2022 to Present)

Glenn was the Lead GIS Developer for the Climate Risk Viewer which is a StoryMap Collection application composed of 11 StoryMaps, 1 Data Hub Site, 1 ArcGIS API for Python Notebook, 10 Experience Builder Web Applications, & 10 Web Maps compiled from ~30 datasets and over 140 feature data layers. Glenn was the lead GIS analyst for developing, designing, managing, and updating all online content, feature services, imagery services, and GIS data incorporated in the final tool.

The CRV is an effective decision support tool that USFS project managers can use to perform localized spatial analysis to strategically combat climate change in their forest and region. For his efforts on the CRV, Glenn was awarded a Certificate of Appreciation from the USFS, a 2023 Chiefs Honor Award, and a 2024 Secretary's Honor Award for providing critical technical expertise in the development of the CRV in response to the Secretary's Memo 1077-004.

United States Forest Service (USFS), Wilderness Evaluation Tool – (GIS Developer: 05/2024 to Present)

The Wilderness Evaluation Tool is an online web tool that is composed of 2 Experience Builders, 3 Web Maps, 2 Dashboards, 1 Hosted Feature Data Layers, 1 Survey123 Form, 1 Survey123 Report Document, 1 VBA Macro, 1 ArcPy Python ArcToolbox and 1 Python Notebook. Using the notebook that utilizes ArcGIS API for Python, the script clones all the AGOL content items to another user where all the embedded content IDs are linked to the newly cloned items so each forest can quickly have their own customizable tool and content. Glenn created the Survey123 form at the request of the client that is composed of ~500 lines over 7 pages. The Survey123 form functions as a user-friendly data input tool to help walk through the wilderness evaluation for each of the forest's proposed areas.

Glenn also designed a custom Python ArcToolbox that leverages ArcPy and Python to append evaluation polygons to the newly cloned hosted feature layer, populate Survey123 form defaults on the backend, processing baseline calculations and critical fields. The script also automatically generated unique, auto-incrementing EvaluationIDs (beginning at 1001) and dynamically calculated acreage values when they were missing from the input data.

United States Forest Service (USFS), Recreation Opportunity Spectrum (ROS) Toolbox & AGOL Tool – (GIS Developer: 09/2025 to Present)

As part of enhancing the Recreation Opportunity Spectrum (ROS) Toolbox, Glenn improved the existing ArcToolbox by streamlining its geoprocessing workflows for greater efficiency and reliability. Key improvements included moving data processing operations into memory to increase performance, implementing automated deletion of intermediate datasets, and adding detailed debugging features. Glenn also added print statements within SearchCursor loops, printed any geoprocessing tool messages, and added datetime timestamps throughout the script to monitor run times for each block of code in the script. Glenn also helped troubleshoot, debug, and update their .pyt Python Toolbox class implementation. Glenn was also instrumental in creating a national ROS layer for the entire USFS at a national level to aid in an impact analysis of an adjustment to a 2001 Roadless law.

Glenn was the lead developer in an additional Python Notebook that leveraged ArcPy, SearchCursor, and Pandas to evaluate the fields and unique data values of any feature class. The notebook would output excel workbooks with a feature class's fields, and all of that field's unique data values for that feature class. The notebook allowed stakeholders to make informed decisions on what input data to include for running the tool at a national level. This script saved the client a lot of time evaluating national level datasets that had 100+ fields, over 90,000+ thousand features, and many non-dominated text fields.

United States Forest Service (USFS) – Climate Risk Viewer (CRV), Map of Biodiversity Importance (MOBI) Toolbox & Raster Function Template Chain – (Lead GIS Developer)

Glenn automated the workflow for processing NatureServe's MOBI data by replacing the manual processing with a Python Toolbox. The toolbox first masked out all the zero values as NULL as they were skewing results in the regional analyses. The script then clipped the national dataset by each U.S. Forest Service region. Each region was then processed separately and each region's MOBI data's 75th, 90th, 95th, and 99th percentiles were calculated using NumPy. Each pixel was then reclassified based on its MoBI value into what percentile category the value fell under and specific to that USFS region. After every region was reclassified, all regions were mosaiced into a new raster all with the same 5 percentile categories based on the 4 percentile values.

Glenn also designed a modified fully dynamic raster function template chain that sat on top of NatureServe's public tile service. By connecting directly to the live service, this design eliminated the need for recurring manual updates and ensured the Climate Risk Viewer always reflected the most current and accurate data. The public tile service was also monitored through UpWork so the team would be notified within 4 hours if the existing public tile service, not hosted by the USFS team, was changed or unavailable.



United States Forest Service (USFS) – FME Data Backup Scripts Connected to ESRI Hosted Feature Layers and Automated on FME Flow – (Lead GIS Developer)

Glenn designed data backup scripts using FME to export a copy of a hosted feature layer's data daily to provide the clients and users with extra assurance of the quality and security of their data. Glenn scheduled these FME scripts on FME flow to run each day at 11 pm and configured the scheduled jobs with automatic email notifications for the success or failure of the execution of the backup scripts. Glenn also created a 35+ page document with step-by-step instructions to maintain and update the entire process.

United States Forest Service (USFS), USFS Plan Revision Data Hub Site – (Lead GIS Developer: 08/2025 to 10/2025)

To support the requirements of the 2012 USFS Planning Rule, Glenn developed the USFS Plan Revision Data Hub Site, transforming a static Excel workbook of 130+ rows of reference data into a dynamic, web-based solution. The Hub site was designed with multiple pages and thematic category cards, allowing users to quickly locate datasets by theme, review descriptions, and identify points of contact. The front page served as a one-stop access point for data discovery, while additional pages guided users step-by-step through the Forest Plan Revision process outlining what data was required at each stage and providing direct access to web services or downloadable copies.

By converting the workbook into an interactive and well-structured Hub experience, this solution streamlined how forests accessed, organized, and applied required datasets. It provided a repeatable framework to support every national forest undergoing Forest Plan Revisions, improving efficiency, accessibility, and consistency across the agency.

United States Forest Services (USFS), Recreation of Opportunity Spectrum (ROS) Data Prep for National Layer – (Lead GIS Developer: 08/2025 to 10/2025)

The USFS needed a national 30 meter resolution Digital Elevation Model (DEM) to use for its analysis in creating a national ROS layer. They wanted to process Alaska and Puerto Rico in different Albers projections, and CONUS and all USFS regions in the same projection. Glenn uploaded a shapefile of CONUS, Alaska, & Puerto Rico to the USGS The National Map (TNM) Downloader to batch download 30m 1-Arc Second DEMs for each of the required areas. Glenn created a python notebook that created a mosaic dataset provided the folder location of the tifs or rasters. After all the tifs or rasters were loaded into the mosaic dataset, the script then updated the boundary, updated the overviews, calculated statistics, and built pyramids. Glenn then created masks of key boundary files and loaded those into each associated Map created in ArcPro to use with each mosaic dataset. After the script is run for each area, the USFS had mosaic datasets of 30 meter DEM's from the USGS TNM Downloader for Puerto Rico, Alaska, and every USFS region to use for inputs to develop a national ROS data layer.

United States Forest Service (USFS) – Wild and Scenic River Evaluation Tool – (Lead GIS Developer)

The Wild and Scenic River (WSR) Evaluation Tool which is a comprehensive online GIS solution that integrates multiple different ESRI technologies including ArcGIS Experience Builder applications, Web Maps, Dashboards, Hosted Feature Layers, custom Arcade expressions for Dashboard and popup profiles, Survey123 forms and Word reports, to standardize the evaluation of river segments across national forests. Glenn developed a Python Notebook that leverages the ArcGIS API for Python to automate the cloning of all 10 AGOL content items to other target users so each forest can have their own custom copy of the tool to use with their own data. The script also remaps all embedded content ids to connect all items to the one hosted feature layer connected to the Survey123 form. The script also automates creating a shared update and a review group to share all the newly cloned items to. The script will automatically have all web maps zoom to the forest's data, rename all the newly cloned items, and update filters on boundary layers embedded in the web maps.

Glenn also wrote a custom Arcade expression to highlight text in the popup based on its value in the status field and created a custom Arcade expression to order a text status field in all Dashboard pie widgets. Working closely with stakeholders, Glenn designed the schema integration so that the data outputs of the tool fed directly into the USFS Enterprise Database, aligning with enterprise GIS architecture and long-term data modeling needs. By standardizing the WSR assessment process and producing clean, schema-ready datasets, the tool delivered significant time and cost savings, while ensuring scalability and adaptability across all forests.

United States Forest Service (USFS), Automating Fireshed Registry Land Ownership Percentages with FME – (GIS Developer: 06/2024 – 07/2024)

The USFS had a long, manual process of updating the land ownership percentages for each fireshed in their Fireshed Registry using data and information from a USGS land ownership REST service. Glenn wrote an FME script that automated these updates into the live tables. The script absorbs the USGS service, and then converts the USGS categories to USFS categories using an attribute manager transformer. The script projects the USGS and fireshed registry data to Albers Equal Area to get the most accurate area calculations at a national scale. The script then clips the USGS layer to the fireshed registry boundary and uses the area on area overlay transformer to find all the overlaps between the fireshed registry and USGS service. Next, the script using the dissolver transformer to dissolve the



output based on the landownership category and Fireshed ID. The script then calculates the area of each polygon that will be the landownership category for each fireshed. Finally, the script then calculates the land ownership percentage of each category for each fireshed, and aggregates / merges the data based on the fireshed ID. The correct land ownership percentage for each category for every fireshed is passed along in FME, and the script updates the live tables. The process is now automated and will save the USFS staff in the following years when the tables will need to be updated again.

United States Forest Service (USFS), Remote Sensing Scripting Support – (GIS Specialist & Developer: 05/2024 – 06/2024)

Glenn has also assisted the USFS with remote sensing scripting. Glenn created a script to calculate an NDVI raster output from public Landsat data. Glenn would pull out the red and near infrared bands from the Landsat raster, and then compute a NDVI raster by taking the near infrared band, subtracting it from the red, and dividing that total by the near infrared band plus the red band. Glenn also wrote a script to help identify water from LiDAR point data using the python library PDAL.

United States Forest Service (USFS), Tongass National Forest Shoreline Data Improvement Plan Project – (GIS Specialist & Developer: 11/2023 – 04/2023)

Glenn was a lead GIS Analyst in assisting the Tongass National Forest improve their overall data quality on their shoreline dataset. The Tongass National Forest needed a more accurate and modern shoreline dataset to update its administrative boundary ahead of a major wilderness evaluation. With 11,000 miles of coastline derived from mixed sources, the forest required a method to prioritize updates where they are most needed to integrate authoritative sources such as NOAA CUSP and LiDAR. With a short timeline, the project demanded a flexible, cloud-based, multi-editor workflow that could be spun up quickly.

Glenn created grids along the entire shoreline and added key metrics based off geospatial analyses that would allow analysts to easily prioritize areas. Glenn then created a web experience builder to handle all the grid updates and visualizations, and template ArcPro projects with reference data where the mean high water combined shoreline was the only editable layer. Analysts would make their shoreline updates in the ArcPro projects, and then all their grid updates on the web experience builder.

Glenn then assisted in cleaning up the data to deliver back to the client and running quality checks for attributes and topography. The Tongass now had a shoreline boundary with more accurate data so that their admin boundary could be updated, and no potential wilderness would be missed in their upcoming evaluation.

Duke Energy & PricewaterhouseCoopers International Limited (PwC), Projection and Datum Comparison Review – (GIS Specialist: 10/2022 – 11/2022)

Duke Energy & PricewaterhouseCoopers International Limited (PwC) were interested in datum and projection recommendations to set a GIS standard for their national companies. The clients had narrowed down the projections to two: Albers Equal Area projection and Lambert Conformal Conic projection. The client was also interested in comparing the NAD1983 datum versus the new NAD2022 datum and which one they should use. Glenn's task was to investigate so the clients could make informed decisions.

Glenn provided two PowerPoint presentation summaries of his findings, as well as a Word document with all his sources. These timely and well-received deliverables enabled the clients to make informed, data-driven decisions with confidence.

United States Forest Service (USFS), Microsoft Power BI, Tableau, & ArcGIS Online Capability and Functionality Comparison – (GIS Specialist: 08/2022 – 12/2022)

Due to his previous experience using Microsoft Power BI, Tableau, & ArcGIS Online, Glenn was selected as the lead analyst to compare the functionalities and capabilities of the three software. The final product was a comparison matrix in an Excel workbook that answered functionality and capability questions for each software with each response side by side for comparison. All responses were researched from authoritative sources and documentation. Glenn also provided hyperlinks to investigate the source information for all responses written in the matrix. The final product was delivered on time, and the quality of the product was well received by the USFS client.

Eversource Gas Company of Massachusetts (EGMA), JANA Risk Model Implementation – (Lead GIS Analyst: 12/2021 – 10/2022)

EGMA wanted to utilize the JANA Risk Model Tool with their existing data to maintain their gas utility assets more efficiently and manage areas of higher risk more effectively. EGMA wanted to also improve their data workflows to better manage the data they were collecting. Locana was tasked with creating FME workflows to automate feeding the latest data into the JANA Risk Model Tool and visualizing the resulting risk scores associated with their gas utilities in GIS. Locana was also tasked to automate a workflow to match a system of record with one of their Enterprise Resource Planning software called Maximo.



Glenn was a key member on this team and was the primary developer of all the final deliverables for the four FME scripts. The scripts automated the workflows for EGMA to visualize the model's risk scores associated with their gas utility assets saving them time and money. Without these FME workflows, the risk model's scores could not be utilized as effectively and would not be able to be viewed in GIS. The scripts pull data from multiple sources and transform the data into the correct formats to be processed and stored appropriately. All scripts were delivered on time and tested on the client's server.

Municipal GIS Partners - PROJECT EXPERIENCE

Village of Lincolnwood, Public Works, Hydrant Flushing Collector & AGOL Dashboard – (Lead GIS Analyst)

Glenn collaborated with the Public Works department to design an ESRI Collector application that would record hydrant flushing form information in a related table to the hydrant features. The application also contained a published dynamic view/layer of the hydrants and their latest associated flushing record. The view also had a filter on the flushing date field to only display features within the last year. When a public works crew member would enter in a flushing record with a date, the view would populate and a feature in the view would appear right behind the hydrant indicating they have flushed this hydrant within the last year.

The collector application digitized all their paper forms easily allowing them to access any past data associated with a hydrant and allowed different crews to easily coordinate which hydrants still needed to be flushed to meet their department's goals. Glenn also created a Dashboard to visualize all the hydrants that have been flushed, still need to be flushed, and equipped the dashboard with key filters and statistics. This allowed crews to streamline coordination and easily access key information they needed from their data.

Village of Lincolnwood, Community Development Department, Residential Lot Analysis Viewer – (Lead GIS Analyst)

Lincolnwood's Floor to Area Ratio (FAR) policy prohibits residents from creating structures that occupy more than 60% of a lot. The Board was concerned that the FAR may negatively impact residents and properties on the east side of town who may have smaller lots, and that would prevent the residents from potentially building larger homes more suitable for families.

In coordination with the Community Development Director, Glenn created a Residential Lot Analysis Viewer that combined lots based on shared base addresses and owner names while also providing statistical breakdowns of key areas in the village. This allowed staff and elected officials to visualize and understand the impact of the FAR policy throughout the village, so they can make an informed, data-driven decision. It also gave the Board confidence in their decision that their policy would not impact any group of residents differently, matching their vision for a more equitable Lincolnwood.

Village of Riverside, Parks Department, Public Parks Story Map – (Lead GIS Analyst)

The village of Riverside had no way of communicating with its residents all their parks, their locations, and existing amenities. In collaboration with the Riverside Parks Director, Glenn created a StoryMap to allow residents to view all the listed parks in the village, and the two public playgrounds. The StoryMap also listed all the amenities at each park with an aerial view to provide the resident with more information about each of the Village's parks. The value provided to the village was to communicate to residents these parks' locations and their amenities. The viewer also indicated which parks have ADA compliant equipment, larger amenities such as basketball or tennis, and listed all playground equipment for children of various ages. A resident can now choose their park based on its features without visiting first.

City of Des Plaines, Public Works & Forestry Departments, Tree Planting Route Maps – (Lead GIS Analyst)

Every year Des Plaines has multiple lists of trees that will need to be planted. Each list of trees is separated depending on the nursery the trees came from, and every tree in each list will need to be delivered to its nearest address to be planted. The deliveries must start and end at the public works building and can be a very time-consuming process as a couple hundred trees are planted every year.

Glenn created tree planting route maps utilizing ESRI's Network Analyst geospatial tool to optimize the tree route deliveries for each nursery. Glenn would process the tree lists provided by the forester, format the data and then geocode the trees into GIS using the nearest associated address for the delivery. Utilizing existing GIS street networks and ESRI's Network Analyst tools, Glenn optimized and labeled each tree delivery location to the quickest delivery route that would start and end at public works. These maps saved Public Works a lot of time, energy, and confusion from their previous workflow and give Public Works the confidence and trust their tree deliveries would be on the fastest route possible.

Tetra Tech - PROJECT EXPERIENCE



Environmental Protection Agency (EPA), Toxic Release Inventory Viewer – (Project Manager)

Glenn was a project manager for a \$45,000 EPA contract to create an internal Toxic Release Inventory (TRI) viewer from multiple data sources. The EPA at the time had no way of visualizing TRI data they were collecting in GIS and were interested in spatially analyzing the data to find trends that would pop out when visualizing the data. Glenn oversaw an intern, and completed the project on time with high marks, and under budget. Multiple webinars were presented on the Release Analysis Viewer Tool and the final tool was received very positively by the client.

Cal Fire, Cal Recycle, & Federal Emergency Management Agency (FEMA), Camp Fire Emergency Response in Paradise, CA – (Lead GIS Specialist)

Glenn was selected to be one of the GIS leads for the post-debris cleanup of one of the largest California fires in recorded history with over 18,000 damaged structures. Glenn utilized Python and VBA to automate various tasks such as processing air monitoring data, creating parcel maps for debris-removal crews, and creating thousands of cover pages for post-fire assessment reports. Glenn was also selected as a key quality data checker of a critical tracking spreadsheet used in the operations center to monitor the post-debris removal cleanup of every property that was damaged in the fire.

Glenn also adapted a VBA script to pull data from various contractor's Google spreadsheets to run key summary statistics and quality check the statuses reported in the main tracker against the contractor's data. The script would identify any statuses that were not up to date in the main tracker, where they then would be manually corrected. These scripts helped reduce staffing requirements and the cost of generating post-debris fire assessment reports. The scripts also gave management the confidence to trust the information reported to make informed data-driven decisions where the data was as accurate and up to date as possible.

Cal Fire, Cal Recycle, & Federal Emergency Management Agency (FEMA), Thomas Fire Emergency Response in Ventura, CA – (Lead GIS Specialist)

Glenn assisted on many different aspects of the Thomas Fire Wildfire including assisting with GIS needs for the project, air monitoring, soil sampling, site assessments, and data management. Glenn helped create, manage, and update a geoportal that provided information on each individual parcel in addition to creating all maps that were requested by the client. Glenn also utilized a python script to create parcel maps for over 700 properties in less than a day. Glenn also assisted with air monitoring debris removal sites by setting up DustTrak's, Gillian pumps, and aircons to monitor for asbestos, dust, and heavy metals in the air. Glenn also assisted with the soil sampling of the project that was done post-debris removal to verify there was no contaminated soil left after the excavation. He also assisted in the site-assessment of the properties pre-debris removal to sketch out all key aspects of the property and highlight any areas of interest to the debris removal crews. Glenn additionally helped assist the operations as a data manager for the debris removal and collection tickets. Glenn helped archive all the tickets properly, quality check all physical tickets matched the recorded values in the database, helped reconcile invoice discrepancies, created necessary daily reports, and resolved issues within the database / system.

Michigan Tech Research Institute - PROJECT EXPERIENCE

Michigan Department of Transportation (MDOT), Spall Detection Algorithm Tool Lead – (GIS Developer)

MDOT had a project that included a proof-of-concept to create a tool for identifying and creating spall polygons from high resolution DEM's that were collected by drones. Glenn created a Python Tool and converted it to an ArcToolbox that processed DEM data by analyzing each individual pixel's elevation, and how that elevation compared to its surrounding pixel's elevations. The script was designed so MDOT could set parameters of what size spall they are interested in finding, and then the result of the script would be a polygon layer that would allow MDOT staff to easily and quickly identify areas that may need further investigation or repair.

National Aeronautics and Space Administration (NASA), Harmful Algae Blooming Mapping – (GIS Developer)

Every summer in Lake Erie, the lake fills with plumes of a certain type of blue-green algae that covers almost the entire western basin. When weather conditions permit, these algae can also float on the surface and create "scum" which blocks out all the light from the ecosystem below, while also causing issues for local economies that rely on either fishing or tourism.

Glenn had several different mapping projects that focused on mapping these plumes in Lake Erie, primarily focusing on the areas near city water intakes, waters near the shore, and specific rivers and lakes in Ohio that suffered similar problems. Glenn oversaw the processing of new MODIS Aqua imagery that was posted daily by NASA. Glenn automated the process using data processing using Crontab and would review the outputs. If Glenn felt the imagery or data indicated large harmful algae blooms, Glenn would create maps that would be posted onto one of MTRI's websites. In addition, NASA would attach a high-tech LIDAR sensor to a plane and fly over key areas to get better imagery that would be higher resolution and avoid clouds. Glenn oversaw the creation of PowerPoints and would help summarize any conclusions about the LiDAR fly over data.