



## AI Transformation & Operational Resilience Leader

*Governed, working AI — grounded in ~15 years of operational resilience, crisis management and business continuity across regulated, global organisations*

AI transformation and operational-resilience leader with ~15 years structuring and delivering technology, risk and crisis-management programmes across global biopharma, financial-market oversight and U.S. critical infrastructure. A proven crisis leader — Incident Commander on national activations including the Colonial Pipeline cyber breach, Merrimack Valley gas explosions, the Aliso Canyon gas-storage emergency and Hurricane Maria — who designs ISO 22301 / 22361-aligned resilience and crisis frameworks, runs exercises from tactical staff through executive level, and embeds a culture of preparedness across thousands of employees. At AstraZeneca, leads AI transformation within the Oncology R&D resilience function and partners with the Enterprise AI team, Technology Governance, Legal and Information Security to operationalise AI governance across a 10,000-employee organisation — building, in daily customer-driven sprints, a proof-of-concept enterprise AI governance platform designed to classify AI submissions against the EU AI Act and internal frameworks. Has conceived and built more than eight AI applications, four now in active in-house development; independently built and shipped an AI compliance platform navigating the EU AI Act, GDPR and DORA, and OpRes Horizon (live at opres.structuredresilience.app), a public regulatory-intelligence platform mapping operational-resilience and crisis-management regulation across 90+ countries. Fellow of the Business Continuity Institute, SIG Leader of the BCI Operational Resilience SIG and committee member of the BCI AI SIG; dual U.S./French citizen, fluent English, intermediate French.

### CORE COMPETENCIES

AI Strategy, Roadmap & Use-Case Portfolio	Operational Resilience (ISO 22301 / 22361)
AI Governance & Responsible-Use Frameworks	Crisis Management & Incident Command
Rapid Proof-of-Concept → Production Delivery	Business Impact Analysis & Dependency Mapping
Multi-Agent LLM Architecture (Gemini · Mistral · Claude)	Exercises, Tabletops & After-Action Reviews
EU AI Act, GDPR, DORA & NIS2 Operationalisation	Cyber-OT / SCADA Security & Critical Infrastructure
Adoption, Acculturation & Training	Emerging-Risk & OSINT Horizon Scanning

### CAREER EXPERIENCE

#### Associate Director, Business Continuity & Crisis Management

2023 – Present

*AstraZeneca, Oncology R&D, Gaithersburg, MD (Global Remit) · North America · Europe · Asia*

Lead AI transformation within the resilience function and operational resilience for a 10,000-employee R&D organisation. Partner with the Enterprise AI team, Technology Governance, IT, Legal, Information Security and Data Engineering to operationalise AI governance; act as de facto product owner for internally developed AI applications across their full lifecycle.

#### AI Governance, Risk Classification & Approval Workflows

- Lead daily customer-driven sprints building a **proof-of-concept enterprise AI governance platform** with the Enterprise AI team — designed to evaluate AI submissions against the EU AI Act and internal frameworks. A deterministic classification layer routes each submission to a fast-track or full-assessment lane; a multi-agent pipeline then scores it, with human reviewers retaining final authority on higher-risk tiers and every agent call and decision logged and exportable for audit. Currently in assessment and iteration with the relevant teams; not yet approved for use.
- Designed the platform's approval workflow, documentation requirements and lifecycle checkpoints, anticipating EU AI Act high-risk classification guidance (Article 6) — realistic failure mode, not commercial label, determines classification.
- Conceived and built a **model-drift analysis pipeline** (proof-of-concept) that measures divergence across the runs of internal multi-agent pipelines and generates targeted refinement recommendations — already used to improve several pipelines — operationalising the EU AI Act's post-deployment monitoring obligation.
- Currently workshopping enterprise-wide **AI bias and fairness monitoring** with the Enterprise AI team — critical in pharma, where biased outputs can affect patient selection and clinical decision support.

- Led the first enterprise-wide GenAI emerging-risks scan across the 10,000-employee organisation, establishing proactive data-governance and responsible-use protocols and translating findings into internal policy for Legal, IT and business leadership.

### **AI Use-Case Portfolio, PoC-to-Production & Delivery**

- Conceived and built **more than eight AI applications** across enterprise, governance and productivity domains; four are now in active in-house development, demonstrating the path from rapid proof-of-concept toward production.
- Co-developed **in 24 hours** with the Enterprise AI team a multi-agent AI grant & tax-incentive search platform that autonomously identifies grants and tax credits applicable to internal AI projects worldwide, with a no-code admin layer where natural-language feedback becomes RAG-stored rules. Demoed up to CFO level.
- Built and deployed independently an AI compliance platform navigating the EU AI Act, GDPR and DORA — a centralised AI project register, automated risk classification and a multi-agent LLM pipeline grounded by RAG in the authoritative regulatory text, so new guidance is operationalised by document upload rather than retraining.
- Built and deployed independently **OpRes Horizon** (live at opres.structuredresilience.app) — a public regulatory-intelligence platform mapping operational-resilience and crisis-management regulation across 90+ countries and 8 industry sectors. A 3-agent, 3-stage AI pipeline (Mistral search → Claude synthesis) produces board-level country profiles with a 0–4 regulatory-intensity score, an executive landscape narrative, sector-specific briefings, a live "Most Regulated" league table, and fully bilingual EN/FR output with Word export — directly bridging my AI delivery with my operational-resilience domain.
- Conceived, built and presented to IT a multi-agent crisis-exercise generation platform (Gemini scenario generation → Mistral adversarial red-team → Claude content), with a custom Mistral agent monitoring reputable news to inject real-world events; now in the final stages of internal development following formal approval. Mistral routing chosen for European data sovereignty.
- Built independently a six-agent clinical-trial supply-intelligence proof-of-concept (React/TypeScript, Express/Node, Google Cloud Run) with an audit-first architecture — no AI output triggers automated action; every decision routes through human review.

### **Adoption, Acculturation & Enablement**

- Designed and delivered structured internal training from prompting fundamentals through building Microsoft Copilot Studio agents; deployed a Copilot Studio crisis agent globally across AstraZeneca.
- Mentored a non-technical colleague to independently build a globally deployed Power Application; built a Power Platform application at **>90% first-deployment adoption across three continents** as the standardised gateway for critical-process data.

### **Operational Resilience & Crisis Management**

- Lead an ISO 22301 / ISO 22361-aligned resilience and crisis-management programme across global laboratories and clinical manufacturing (GMP, including QA/QC for cell therapy and oncology); identify and prioritise Important Business Services, run business-impact analyses and map upstream/downstream and OT dependencies. Launched and now govern the business-continuity programme for AstraZeneca Japan R&D.
- Established a steering committee of Senior Vice Presidents as the governance body for the Oncology R&D resilience programme; secured executive approval of a continuity framework that explicitly maps to **NIS2** Article 21, with gaps tracked on the resilience roadmap.
- Designed and facilitated tabletop exercises of increasing complexity — GPS outage, vivarium disease-spread, wastewater-tank failure and **active-assailant leadership** scenarios — using time-boxed injects, decision logs and escalation thresholds; built and run a five-year "crawl, walk, run" exercise programme end-to-end, translating findings into runbook updates and owner-assigned actions tracked to closure.
- Provide **second-line assurance on security- and sûreté-led exercises** (active-assailant and site-security scenarios) and concise governance reporting for senior leadership; engaged a third-party auditor and implemented recommendations, with one strategic-site crisis plan rated highly effective.
- Built a GIS dashboard overlaying active clinical-trial sites with multi-threat feeds, enabling proactive resilience decisions during the Middle East conflict; strengthened third-party and supply-chain resilience through dual-sourcing of critical supplies and stronger DR provisions in vendor contracts (recovery across AWS availability zones).
- Pioneered the "Resource MTPD" concept, uncoupling recovery-time targets from supporting resources and averting multi-million-dollar capital expenditure on single-point-of-failure infrastructure.
- Manage and mentor on-site and matrixed staff across crisis-management and business-continuity disciplines. SIG Leader, BCI Operational Resilience SIG; Committee Member, BCI AI SIG. BCI World 2024 presenter (cross-sector exercising); 2025 panel moderator (psychological safety for crisis managers).

## Business Continuity Program Manager

2022 – 2023

Financial Industry Regulatory Authority (FINRA), Corporate Risk Management · Rockville, MD

Led the overhaul of FINRA's business-continuity guidance and crisis-response protocols for U.S. financial-market operations housing data for 100M+ accounts; internal consultant across Technology, Market Operations, HR, Risk, Communications and Information Security.

- Steered the Business Continuity & Operational Resilience Steering Committee across senior leaders from Technology, Market Operations, HR, Facilities, Communications and Risk — setting cadence, agenda and tracked decisions; ran ~10 executive "BC Roadshows" and converted findings into control self-assessments and action plans tracked to closure.
- Directed improvements to the crisis-management framework and designed and facilitated executive exercises — **active-shooter, cyber-ransom and prolonged-power-failure** scenarios — translating outcomes into board-level proposals.
- Led an **integrated security-monitoring cell** during a reputational and physical-security event, coordinating internal communications, physical-security signals and social-media monitoring into a single executive risk view (sûreté/sécurité coordination alongside continuity).
- Developed cyber-incident playbooks integrating IT recovery with business-continuity actions; authored the enterprise risk library and ransomware response plan; delivered second-line assurance on the Consolidated Audit Trail BCP.
- Conducted black-swan market-risk assessments before the Russian invasion of Ukraine, including NATO-territory escalation analysis and cyber-risk exposure to international partners.
- Stood up an OSINT threat-monitoring feed and an ArcGIS people-accountability dashboard; managed emergency-notification SaaS (SLA validation), ran vendor scans and API-fit evaluations for third-party risk SaaS, and led matrixed staff across BC plans, emerging-risk databases and mitigation strategies.

## Senior Resilience Engineer · General Engineer · Emergency Support Specialist

2012 – 2022

U.S. DOT — Pipeline & Hazardous Materials Safety Administration (PHMSA) · Washington, DC

A decade of progressive responsibility leading PHMSA's continuity, crisis and resilience portfolio across U.S. critical energy infrastructure — technical lead on national energy incidents, cyber-security lead for pipeline SCADA/OT systems, and intergovernmental coordinator — while turning manual federal processes into working software. Managed ~\$1.5M in R&D and professional-services contracts (Contracting Officer Representative, Level 2). The crisis and technical foundation the later AI work builds on.

### Incident Command & National-Scale Crisis Response

- Deputy Incident Commander during the **Merrimack Valley gas explosions** (2018): recalled staff after hours, stood up a crisis cell, established operating rhythm and issued tailored situation reports to DOT, Congress and the White House while managing concurrent hurricane hand-offs.
- Federal response cell for the **Colonial Pipeline cyber breach** (2021): translated technical outage data into operational-impact scenarios, mapped state-level dependencies and framed allocation, prioritisation and public-messaging decisions for interagency leaders.
- Federal focal point through the **Aliso Canyon gas-storage emergency** (2015–16): directed a cross-agency team, briefed the Secretary of Transportation and White House weekly, and authored the after-action report that guided new safety measures.
- Coordinated with the U.S. Army Corps of Engineers and generator vendors during **Hurricane Maria** to restore power to defence-critical pipeline infrastructure.

### Operational Resilience, Security & Regulatory Design

- Co-authored legislation with digital-operational-resilience provisions mirroring **DORA** — risk management, mandatory incident reporting, information-sharing and mandated exercises.
- Authored the Federal Register Advisory Bulletin "*Safeguarding and Securing Pipelines from Unauthorized Access*," translating physical-security (sûreté) risk findings into authoritative regulatory guidance.
- Office of Pipeline Safety **Cyber-OT subject-matter expert** and TSA liaison: developed SCADA/OT vulnerability inspection documentation and a voluntary cyber-assessment rubric for pipeline operators.
- Developed Administration-level COOP and Devolution plans, led the agency test-and-exercise programme and managed the backup-network site for rapid restart of critical pipeline operations.

### Emerging Risk, Cyber-OT & Horizon Scanning

- Built catalogues of emerging risks (EMP/geomagnetic disturbance, cyber-OT, geohazards) via OSINT horizon scanning; produced ransomware, extreme-weather and supply-chain briefings for senior government leadership including White House staff.

- Coordinated EMP/GMD research with the Department of Energy and three National Laboratories and a seismic-vulnerability assessment with the USGS; participated in **DARPA RADICS** Exercise 6, conducting black-start grid recovery after a simulated cyber-attack.

### **Engagement, Leadership & Mentoring**

- Led PHMSA's crisis-management restructuring — proposing elevation of the emergency-management / business-continuity function, redefining roles and responsibilities, and training internal staff and interagency partners on the new response framework.
- Represented PHMSA on the Energy Government Coordinating Council and Oil & Natural Gas Subsector Coordinating Council, liaising with Senior Executive Service officials and DHS, DOE, TSA and DOD on national resilience priorities.
- Champion of the Public-Private Analytic Exchange Program across two years, directly leading multidisciplinary teams of 12 senior public- and private-sector leaders and briefing top government officials; managed and mentored staff on redaction of information critical to public safety and national energy security.

### **Technology & Innovation**

- Designed and built a **SharePoint workflow** that digitised the federal oil-spill-response-plan review process (49 CFR Part 194): a three-stage routing engine adopted for 99% of national reviews and used for five years — a precursor to today's low-code work.
- Pioneered predictive geospatial (**ArcGIS**) modelling, fusing National Weather Service forecasts with pipeline-infrastructure data to pre-position federal resources; built a real-time COVID-19 operational dashboard and coordinated FEMA PPE distribution to pipeline operators nationwide.

## **AI APPLICATION PORTFOLIO**

*Built with multi-agent pipelines (Google Gemini, Mistral AI, Anthropic Claude) and AI-assisted development environments. Tools built within AstraZeneca are described by capability; independently built products are named.*

- **Enterprise AI governance & risk-assessment platform** (AstraZeneca, proof-of-concept in assessment) — tiered EU AI Act classification, multi-agent assessment, human-in-the-loop, full audit trail, drift monitoring.
- **AI grant & incentive search platform** (AstraZeneca, with the Enterprise AI team) — multi-agent web search with a no-code feedback layer; built in 24h, demoed to CFO.
- **Crisis & continuity exercise builder** (AstraZeneca, approved internal PoC) — multi-LLM scenario, document and PowerPoint generation.
- **OpRes Horizon** — independently built public regulatory-intelligence platform mapping operational-resilience & crisis-management regulation across 90+ countries and 8 sectors; 3-agent / 3-stage pipeline, 0–4 regulatory-intensity ranking, live "Most Regulated" league table, bilingual EN/FR. Live at [opres.structuredresilience.app](https://opres.structuredresilience.app).
- **ReguCheck Nexus** — independently built AI-compliance platform (EU AI Act, GDPR, DORA).
- **Horizon ClinOps** — independently built clinical-trial supply-intelligence platform, audit-first multi-agent architecture.
- **Legal Horizon** — multi-jurisdiction legal & regulatory horizon-scanning.
- **Crisis Compass** — AI crisis-management hub with jurisdictional reporting logic.
- **Monde Français** — CEFR-tracked French-learning ecosystem (consumer-grade range).

## **EDUCATION & CREDENTIALS**

- M.S., Engineering Management (Crisis, Emergency & Risk Management) — The George Washington University
- B.S., Mechanical Engineering — University of Maryland, College Park
- Fellow of the Business Continuity Institute (FBCI) — highest grade of BCI membership

## **TECHNICAL PROFICIENCIES**

**AI & Development:** Multi-agent LLM orchestration (Gemini, Mistral, Claude), Microsoft Copilot Studio, AI-assisted development (Claude Code, Google AI Studio, Mistral Vibe CLI), prompt engineering, React/TypeScript, Node/Express, RAG pipelines, Power Platform (PowerApps, Power Automate, Power BI, PowerFx)

**Data & Visualisation:** ArcGIS (geospatial dashboards, predictive models), Power BI, Excel (advanced)

**Frameworks & Regulation:** EU AI Act, GDPR, DORA, NIS2, ISO 22301 / 22361, NIST AI RMF, ISO 42001 (awareness)

**Languages:** English (native), French (intermediate, actively developing). Dual U.S. / French citizen.