



## Operational Resilience & Crisis Management Leader

*Battle-tested incident command and ISO 22301 / 22361 resilience — now augmented with governed, working AI*

Operational-resilience and crisis-management leader with ~15 years structuring and delivering business-continuity, crisis and risk 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, the **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 operational resilience for a 10,000-employee Oncology R&D organisation: governs the business-continuity programme for AstraZeneca Japan R&D, established a steering committee of Senior Vice Presidents, and secured a continuity framework explicitly mapped to NIS2 Article 21. Increasingly augments resilience delivery with AI — building OpRes Horizon (live at opres.structuredresilience.app), a public platform mapping operational-resilience regulation across 90+ countries; a multi-agent crisis-exercise generation platform; and a globally deployed Copilot Studio crisis agent. 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

Operational Resilience (ISO 22301 / 22361)	Crisis Management & Incident Command
Business Impact Analysis & Dependency Mapping	Exercises, Tabletops & After-Action Reviews
Executive Governance & Steering Committees	Cyber-OT / SCADA Security & Critical Infrastructure
Third-Party & Supply-Chain Resilience	Emerging-Risk & OSINT Horizon Scanning
DORA, NIS2 & EU AI Act Operationalisation	AI-Enabled Resilience & Crisis Tooling

### CAREER EXPERIENCE

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

2023 – Present

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

Lead operational resilience and crisis management for a 10,000-employee R&D organisation across global laboratories and clinical manufacturing, and drive AI-enabled tooling within the resilience function.

#### **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).

### **AI-Enabled Resilience & Crisis Tooling**

- 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 agent monitoring reputable news to inject real-world events; now in final stages of internal development following formal approval.
- Built and deployed **OpRes Horizon** (live at opres.structuredresilience.app) — a public regulatory-intelligence platform mapping operational-resilience and crisis-management regulation across **90+ countries and 8 sectors**, producing board-level country profiles with a 0–4 regulatory-intensity score, a live “Most Regulated” league table and bilingual EN/FR output.
- Deployed a **Copilot Studio crisis agent globally** across AstraZeneca and delivered structured internal training; led the first enterprise-wide GenAI emerging-risks scan, translating findings into responsible-use protocols for Legal, IT and business leadership.

### **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.

### **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. Managed ~\$1.5M in R&D and professional-services contracts (COR, Level 2).

### **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 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) findings into authoritative regulatory guidance; served as Office of Pipeline Safety **Cyber-OT subject-matter expert** and TSA liaison, developing SCADA/OT vulnerability inspection documentation and a voluntary cyber-assessment rubric.
- 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, Engagement & Technology**

- Built catalogues of emerging risks (EMP/GMD, cyber-OT, geohazards) via OSINT horizon scanning; coordinated EMP/GMD research with the Department of Energy and three National Laboratories and participated in **DARPA RADICS** Exercise 6, conducting black-start grid recovery after a simulated cyber-attack.
- Led PHMSA's **crisis-management restructuring**; represented PHMSA on the Energy Government Coordinating Council, liaising with Senior Executive Service officials and DHS, DOE, TSA and DOD on national resilience priorities; championed the Public-Private Analytic Exchange Program, leading teams of 12 senior leaders.
- Designed a **SharePoint workflow** that digitised the federal oil-spill-response-plan review process (49 CFR Part 194), adopted for 99% of national reviews; pioneered predictive geospatial (ArcGIS) modelling to pre-position federal resources — early precursors to today's AI-enabled resilience work.

## **AI-ENABLED RESILIENCE TOOLS**

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*Selected AI applications built to strengthen resilience and crisis delivery (multi-agent pipelines across Gemini, Mistral and Claude).*

- **OpRes Horizon** — public regulatory-intelligence platform mapping operational-resilience & crisis-management regulation across 90+ countries and 8 sectors; bilingual EN/FR. Live at opres.structuredresilience.app.
- **Crisis & continuity exercise builder** (AstraZeneca, approved internal PoC) — multi-LLM scenario, document and PowerPoint generation with adversarial red-team and live news injects.
- **Crisis Compass** — AI crisis-management hub with jurisdictional reporting logic.
- **Enterprise AI governance & risk-assessment platform** (AstraZeneca PoC) — tiered EU AI Act classification with human-in-the-loop and full audit trail, extending resilience governance to AI itself.

## **EDUCATION & CREDENTIALS**

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- 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**

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**Resilience & Crisis:** ISO 22301 / 22361, NIST AI RMF, Business Impact Analysis, dependency & OT mapping, NIMS/ ICS incident command, exercise design (tabletop → executive), after-action reviews, BCP/DR, COOP & Devolution planning

**Frameworks & Regulation:** DORA, NIS2, EU AI Act, GDPR, ISO 42001 (awareness)

**Data, Security & AI:** ArcGIS (geospatial dashboards, predictive models), Power BI, Cyber-OT / SCADA security, OSINT horizon scanning; multi-agent LLM orchestration (Gemini, Mistral, Claude), Microsoft Copilot Studio, Power Platform

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