Building AI Fluency in Life Sciences Operations

Lessons from the Clinical AI Innovators Network (CAIIN)

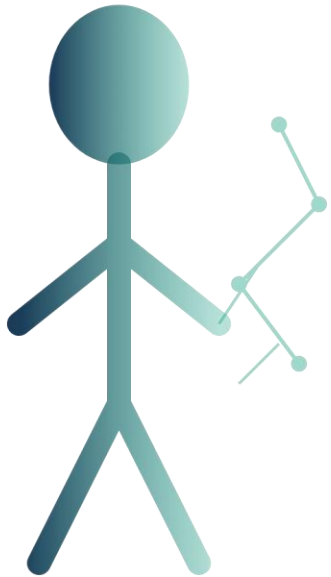
Kevin Anderson | Sr. Director, Clinical Operations, Moderna

The Shift Underway

AI is reshaping how we plan, decide, and execute clinical work.

The differentiator is no longer access to technology—it's fluency in understanding how to use it well.

In drug development, fluency determines how quickly we learn and how effectively we lead.



Defining AI Fluency

AI fluency is the ability to understand, evaluate, and apply AI optimally in daily work.

It's not about coding—it's about critical thinking and operational judgment in an automated world.

My AI Journey

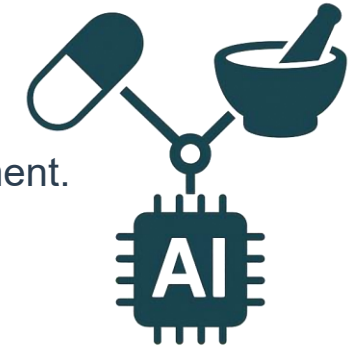
From Curiosity to Mastery

Got ChatGPT day one → Built checklists → Changed Jobs→ Asked Chat to build a GPT → Courses and AI-first mindset

Why Building Fluency Matters

At forward leaning companies AI now touches every part of drug development.

Its effect is becoming increasingly impactful.



Speed

Faster, more consistent decisions

Quality

Reduced manual effort

Integrity

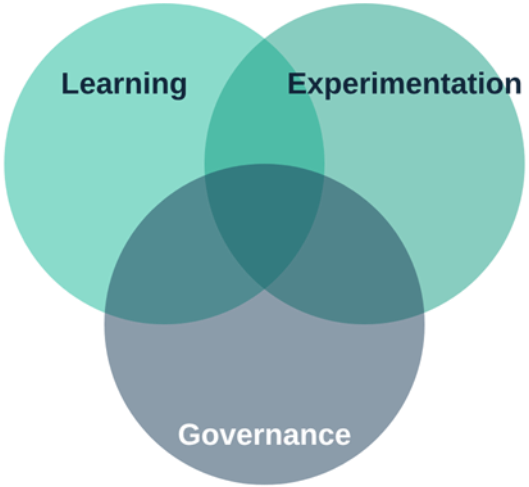
Built-in governance and compliance

The Clinical AI Innovators Network

(CAIIN)

A cross-functional community exploring how AI supports real clinical work.

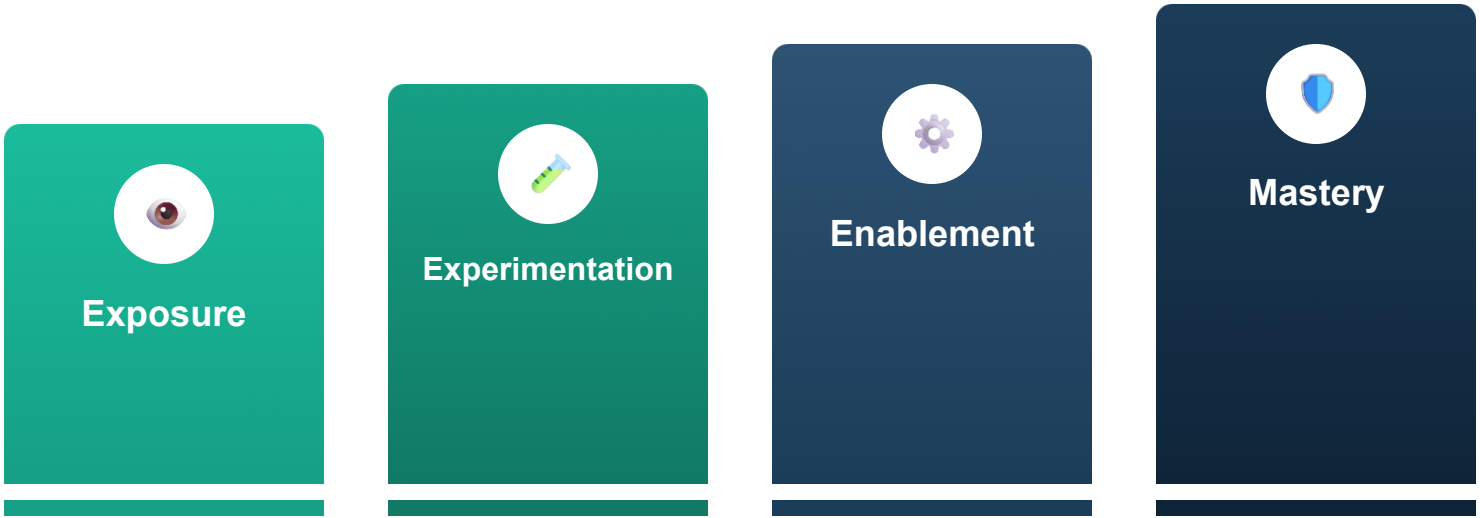
- Safe space to experiment and learn together
- Share insights across companies and functions
- Build confidence in responsible AI use



The Four-Pillar AI Fluency Framework

Exposure | Experimentation | Enablement | Mastery

A practical roadmap for embedding AI capability and accountability into operations.



Repeatable, measurable, and adaptable impact across functions.

Inside Our Sessions

What We Cover

Topics

- 👥 Peer learning
- 🏢 Company insights
- 🖥️ Vendor walkthroughs
- 🔧 Tool mechanics
- 🧬 Drug development applications
- 🛡️ Responsible use
- 💬 Open forum

Why It Matters

What works, what doesn't

Policies, pilots, guardrails

Live demos, capabilities, limits

How models and agents work

Design, start-up, conduct, close-out

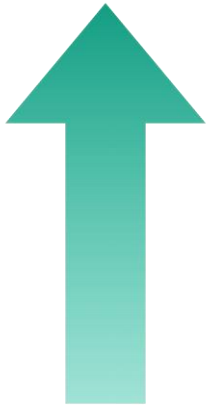
Privacy, compliance, auditability

Questions and takeaways

Early Observations

What we're seeing so far

- Growing curiosity and experimentation
- Sharper focus on governance and validation
- Early reduction in repetitive tasks
- Cultural shift toward responsible experimentation



Momentum

Key Lessons Learned

What is happening

- AI is improving site ID & patient recruitment through automated screening and targeting.
- Digital twins and synthetic control arms enhance power, cutting control-arm size by up to 25%.
- Protocol-based training reduces manual preparation and speeds onboarding.
- TMF and document agents automate filing, but human oversight remains essential.
- It is important to focus on “AI assist, not AI alone” to preserve quality and compliance.

The Future of our Industry

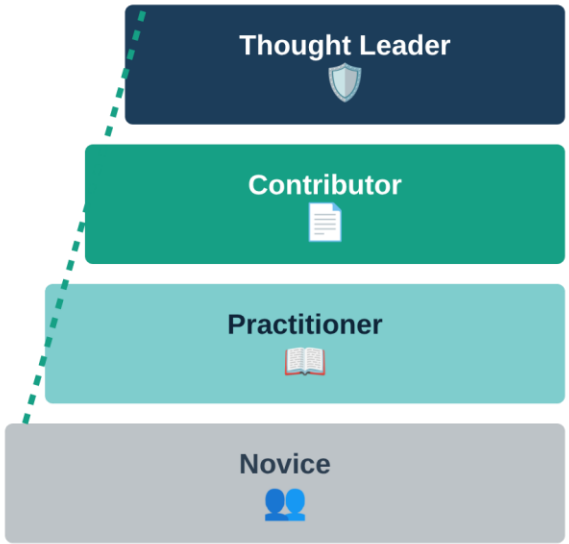
Where we are going

- Moving from isolated pilots to integrated, enterprise-wide AI ecosystems.
- Widespread use of multi-agent frameworks connecting research, operations, and compliance.
- Growth of low-code and no-code tools empowering clinical and scientific staff to build their own AI solutions.
- Shift toward validated, auditable AI pipelines governed under SOP frameworks
- Emergence of “AI as co-worker” — intelligent agents assisting with design, oversight, and decision support across the development lifecycle.

The Road Ahead

Where We're Headed Next

- Continue growing collective AI fluency skills
- Keep learning through shared use cases and tool explorations
- Over time, publish position papers, white papers, and journal articles
- Maintain focus on responsible, practical application—not theory



The future of pharma belongs to those who amplify human intelligence with artificial intelligence