

CUSTOMER STORY

Onboarding a Lab Across Borders, Without Losing the Knowledge

How Dr. Noa Avrutsky used REACTOR to train a remote team in a new country, and how the system caught a safety detail no standard operating procedure (SOP) would have flagged on its own.

Background



Dr. Noa Avrutsky is a Senior Chemist at an industrial chemistry organization. The team was opening a new analytical lab in Italy, a branch of the organization, and Noa was responsible for bringing a remote team up to operating speed on protocols she had built and refined over years of bench work. The work covers analytical chemistry and bioprocess monitoring: spectroscopy, wet chemistry methods (COD, alkalinity, titrations), and a strong focus on fermentation and anaerobic biomass analysis, with a number of protocols running on Merck analytical equipment and reagent kits.

For any R&D organization with distributed labs, the question is the same: how does a senior scientist's working knowledge transfer to a remote team without the scientist becoming a permanent travel and Zoom dependency? It sits inside the larger challenge every R&D organization faces: reducing risk while protecting hard-earned knowledge equity.

The Challenge

Setting up a lab remotely, with chemists who never worked under the founding scientist, is hard. Static standard operating procedures (SOPs) only carry so much. They describe the procedure but don't answer the questions a real bench scientist asks at the moment: which method for this matrix? Is this sample still good after sitting overnight at 4 °C? Why is the signal unstable on this run? Those answers live in the head of the person who wrote the protocol.

The default fallback, long Zoom calls and repeated walkthroughs with required travel, is slow, expensive, and brittle. The senior scientist becomes the bottleneck. The trainee learns through repetition rather than reasoning. Subtle but critical details (chemical compatibility, safety considerations, edge cases that don't show up on a clean run) get learned the hard way.

These org-level costs compound: senior scientist time onboarding instead of higher-leverage R&D, slow time-to-productivity at the new site, and unmanaged risk between what the protocols say and what the trainee does.

WHAT WAS NEEDED

A system that could carry her protocols and her reasoning to the new lab, answering the trainee's situational questions in real time, not just handing them documents.

"It was impressive to see the system not just repeat protocols, but actually reason through them and catch potential safety and compliance issues."

Noa Avrutsky, Senior Chemist

How REACTOR Fit In

She loaded a few dozen protocols into REACTOR, from routine analyses to more complex experimental procedures, and added the chemist running the Italian lab as a user. The two ran short Zoom training sessions with a third participant in the conversation: REACTOR itself.

The trainee asked the kind of practical, situation-driven questions that come up at the bench. "Which method should I use to measure COD for this specific sample matrix?" "Can I run this analysis if the sample was stored overnight at 4 °C?" "What should I do if the signal is unstable during this protocol?" REACTOR drew on the uploaded protocols, grounded its answers in chemistry, and gave responses the trainee could act on immediately. As confidence grew, the questions got harder, and at one point a trainee surfaced something that could easily have slipped past a static SOP.

WHAT REACTOR CAUGHT

A trainee asked about one of the Merck COD kits in the lab's workflow. The kit contained a mercury-based component, which carries different handling and disposal requirements than the standard reagents around it. REACTOR immediately flagged the difference and surfaced the relevant safety considerations. In an audit-grade environment, a compliance miss like that would be a reportable incident. The system was reasoning across the protocols, not just retrieving them, and catching what a new chemist working from a static SOP would have missed.

Unlike generic AI, REACTOR was designed with a chemical intelligence layer, built to reason with the nuances of R&D in mind.

TIME SAVED IN TRAINING & ONBOARDING

Weeks of training, compressed into days.

DOZENS

PROTOCOLS INGESTED

FEW

ZOOM CALLS, MINIMAL TRAINING

ZERO

ADDITIONAL TRAVEL REQUIRED

The Outcome

Training compressed from what would have been weeks of repeated walkthroughs into a few short Zoom sessions. After that, the new chemist worked largely independently, using REACTOR as real-time bench support.

The senior scientist stayed available and never became a bottleneck. Her time went back to higher-leverage R&D. The new lab came online faster and at lower coordination cost than the default playbook would have allowed. The institutional knowledge moved with the operation instead of staying stuck with the person who built it.

What This Means for R&D Leadership

For R&D organizations running labs across more than one site, the limiting resource is rarely capital or instruments. It is the slow, error-prone transfer of working knowledge: between sites, between senior and junior scientists, and across turnover. SOPs alone don't bridge that gap. People do, and people don't scale.

REACTOR closes the gap by treating uploaded protocols not as static documents but as a reasoning surface the team can interrogate. The senior scientist's expertise becomes a layer the wider organization works with: chemistry-grounded answers in place of keyword matches, situational guidance in place of boilerplate, and safety judgment for the moments when a new chemist is in an unfamiliar room.

The operational implications are direct. Senior scientist time is recovered for the work only senior scientists can do. New sites and new hires reach productive capacity faster. Compliance-sensitive details get caught earlier. And institutional knowledge is held in a system the team can reason with, instead of in the head of one person.

INSTITUTIONAL KNOWLEDGE, NOT TRIBAL

Expertise held in a system, not in one head.

Protocols and reasoning patterns survive staff turnover and travel with the organization, not with the individual.

SCALES ACROSS SITES & HIRES

New labs and new chemists reach productive capacity faster.

Senior scientist time stops being the throttle on every new buildout, every new hire, every new shift.

COMPLIANCE-AWARE BY DESIGN

Catches risks a static SOP would not.

Reasons across protocols to surface compatibility, handling, and disposal flags, the kind of detail that becomes an incident when missed.

AT A GLANCE

R&D Leader: Dr. Noa Avrutsky, Senior Chemist (industrial chemistry)

Field: Analytical Chemistry & Bioprocess Monitoring

Methods: Spectroscopy; wet chemistry (COD, alkalinity, titrations); fermentation; anaerobic biomass analysis

Equipment: Merck analytical instruments and reagent kits, among others

Active in REACTOR: Q1 2026 onward

REACTOR CAPABILITIES ENGAGED

- Custom protocol upload and project-level knowledge capture
- Chemistry-native reasoning over uploaded SOPs
- Situational, real-time bench support
- Safety and compatibility flagging across protocol context
- Multi-user team access for distributed labs
- Conversational follow-up that builds on prior context

REACTOR by Elementics.AI

The R&D workbench for chemical and materials science. Built by scientists, designed for real R&D workflows.

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