



Episode 787 | October 16th, 2026

Joe Spurgeon, PhD

Life & Times: A Career in Research, Field Investigations & Expert Testimony, Part 1

Today, IAQradio welcomed Dr. Joe Spurgeon for *Life & Times: A Career in Research, Field Investigations & Expert Testimony*. From government research and laboratory leadership to environmental health assessments and indoor air quality investigations, Dr. Spurgeon has built a distinguished career spanning multiple disciplines. We discussed his experiences investigating water intrusion and microbial contamination, teaching mold investigation and sampling methods, interpreting data, and serving as an expert witness in mold litigation. His books are available at <http://expertonmold.com/>

Nuggets mined from today's episode:

Early career and his road to indoor environmental science. Joe Spurgeon grew up in rural Indiana and was one of only 2 people in his family attending college. Interestingly, he often lived with his grandfather who was half native American and farmed and trapped for a living. Joe attended a country grade school with two grades in the same room but that was the basis for a good education.

What drew you to Analytical Chemistry and Environmental Health? Joe was always interested in science and the environment and pursued an Air Pollution Fellowship at the University of Pittsburgh, where he attended the Graduate School of Chemistry and the Graduate School of Public Health.

How did your education shape the career that followed? A multi-disciplinary approach was invaluable – analytical perspective, environmental health training, and MBA in strategy and planning contributed to a broad perspective when evaluating and implementing projects.

Your career has taken you through several government agencies and research programs. Did you have a long-term career plan, or did one opportunity naturally lead to the next? No real planning, Joe was prepared when an opportunity presented itself. When the opportunities became available Joe was trained in analytical chemistry, airborne pollutants, toxicology, and project management. The unique element was a personal contact who was aware of his qualifications.

You worked on the National Bureau of Standards' lead-paint poisoning program early in your career. What were you investigating, and what did that experience teach you about the relationship between environmental measurements and human health? Joe was part of the initial three-city survey (Baltimore, DC and Philadelphia) for lead-in-paint and validated the use of portable XRF instrumentation vs lab analysis. Joe taught XRF use and operation to city public health personnel. Joe learned that data is not very relevant unless the public can be persuaded to act on those data. Joe provided the vivid example of a 2-year-old child eating painted plaster with high lead. When Joe pointed out the hazard and risk to the mom, she responded that the paint and plaster contained nutritionally valuable minerals and was not convinced of the harm.

Government research and environmental exposure assessment. You went on to direct the FAA's Combustion Toxicology Laboratory. What was the lab investigating? I had to design and built the lab and then develop and implement the number one priority project. One of the most famous air fatality incidents was the Varig flight from Brazil to Paris, where some 350 passengers died in their seats, not from fire but from smoke inhalation. The cause of the fire was a cigarette in a washroom waste receptacle resulting in a smoldering fire. The flight crew survived because they were breathing an oxygen/air mixture from a closed system; the passengers succumbed because they were breathing a mixture of oxygen/smoke laden cabin air. Joe's group tested all the materials flying on US registered commercial aircraft for flammability, smoke density, toxic gas emissions, and test animal lethality.

What were some of the most interesting challenges involved in that work? Sampling in environments containing dense smoke and heat. Developing new methods – Ion Chromatography for anions (first), monitoring animal models in smoke-filled environment (first). Seat fabric # 88 found to be – “off the charts” in lethality.

You also performed health assessments for CDC/ATSDR and worked on the US EPA's Laboratory Exposure Assessment Project. What did those assignments involve, and what did they teach you about evaluating environmental exposures?

CDC: As a health assessment scientist, Joe worked with EPA site data from Superfund waste sites to identify Contaminants of Concern, write site reports, and participate in public meetings with town residents. Determine if people residing near the site could safely use well water and eat vegetables grown in their gardens.

LEAP: Ten-year project – first year developing protocols, forms, and database. Collected over 2,000 personal & area samples from chemists in the ten EPA Regional labs.

US Public Health Service projects tell our audience what the Public Health Service does and the types of projects you were personally involved with? As a consultant to the Div of Federal Occupational Health, Joe was tasked with responding to IAQ incidents and health complaints in federally owned or leased properties.

- EPA Laboratory Exposure Assessment Project – Assessing chemical, physical and microbiological exposures in EPA regional laboratories.
- NOAA Medical Clinic- the staff were on the verge of being fired due to health complaints. Two mold inspectors found nothing during their inspections. Joe found *Stachybotrys* in 18 of 24 samples, vindicating the staff and saving their jobs.
- SSA Western Process Center, Legionella. Two “brain dead”, 10 hospitalized. Managed Social Security response, 40 OSHA staff onsite, 60 remediators, 24/7 for 3 months. Traced the probable source of Legionella to a janitors’ sink.
- EPA Region 8 Laboratory- sprinkler system discharged, HVAC system shut down and heaters brought in resulting in mold amplification.
- DOT Headquarters– Focus Group, women and rashes. *Stachybotrys* traced to women’s shower. 9-month project.

Having worked across several federal agencies, did you notice significant differences in how they approached scientific research, risk assessment, and public health questions? Yes, each agency has its own personality. NIST (NBS) – work was rigorous and high quality. EPA – regional research and technical facilities vs public-facing offices in DC. FAA – an engineering vs scientific approach.

The transition to indoor air quality and mold investigations.

*FYI- Radio Joe takes notice of Dr. Spurgeon when he sees Joe on the TV show '48 Hours' at Erin Brockovich's home with a swab in his hand commenting on *Aspergillus versicolor*. Joe spent 3 days onsite investigating, the first 2 days being directed by the client and the final day doing what needed to be done.*

How did you make the transition from government research and exposure assessment to consulting on microbial and indoor air quality?

- *FAA to MBA, then building, then EPA's Indoor Air Division*
- *Remodeling – wet drywall, hospitalized*

You have investigated numerous residential and commercial properties involving water intrusion and microbial contamination. We see lots of academic research on microbial issues but often it doesn't help much in the field. Why is this and what can be done to bridge the silos between academia and field work?

- Theory and research can be valuable in explaining what we observe in the field.
- But a lot of the research work is often based on methods that have not been validated.
- Can any of us name a sampling method that has been validated?
- In Joe's opinion, few if any of the commonly used mold sampling methods "work" - produce results that are representative and can be interpreted.
- Properly Training the Trainers (OSHA protocol) to pass on factual knowledge rather than anecdotal information would help.
- We have instructors that don't understand, or teach, the elements of an inspection, the appropriate use and limitations of sampling methods, or how to not just collect, but to assess and interpret the results

When you arrive at a building with a reported mold problem, what are the first things you want to understand before deciding whether sampling is necessary?

- Joe opines sampling is always necessary as confirmation.
- Thirds- Joe finds broadly 1/3 of the homes he investigates don't have a mold problem, a problem can be detected in 1/3 of the homes without sampling, and 1/3 of the homes have mold problems that would never have been

identified without sampling. Joe provided one of many examples of the occupant of a ground floor apartment suffering from double pneumonia. Sampling revealed high mold counts in air, carpet, and soft-surface samples but the interior was pristine. Joe traced the problem to episodic moisture caused by irrigation resulting in periodic carpet wetting and drying.

Mold sampling and laboratory analysis are often treated as the centerpiece of an investigation. Where do sampling and analytical results fit into the larger process of understanding a building? This is a complex issue. It depends on the methods and protocols used as to whether the samples have any value at all. It's the 80-20 rule, 80% of the data Joe reviews has minimal value. It's not sampling that doesn't work, it's the sampling method that often doesn't work.

Joe Spurgeon's Additional Comments:

- Research helps explain what is observed. Research doesn't explain the observations.
- Many commonly used IAQ sampling methods don't work and don't provide samples that can be interpreted in a meaningful way.
- Joe admits his bias toward extended sampling times. (60-90 minutes)
- Advocates the use of better sampling methods to acquire data that can be interpreted, and that using currently available data can lead to misleading conclusions when conducting research.
- Occupant interview, site inspection and symptomology. Joe uses mold as the tracer for microbial contaminants, if customer can afford it, he will search for other microbes in a second more detailed investigation and analysis.
- Joe is concerned about the amount of valuable industry info and resources that are now behind pay-to-view walls, especially as it affects younger inspectors wanting to learn new concepts.
- PET PEEVE- Immune compromised patients returning to "moldy" homes. Something needs to be done: Radio Joe suggests Joe speak with Dr. Jay Portnoy, Kevin Kennedy and Luke Gard Children's Mercy Hospital in Kansas City.

ROUNDUP

Pete Consigli, Global Restoration Watchdog & Industry Historian:

- 1990s “mold is gold” days. Melinda Ballard started the ball rolling. US insurers set policy limits on mold. Australian insurance carriers still cover mold.
- Perhaps the federal government’s asbestos program would be a good framework for train-the-trainer mold investigation courses?
- Dr. Alice Delia, PhD (Enthalpy/Prism Analytical) developed a presentation titled “smoke the new mold”., presented at Winter Break 2022 in Deerfield Beach, FL. Wildfires driving new business opportunities, for mold assessors.
- 3rd party mold inspection/investigation/PRV philosophy is being carried over into wildfire assessments.
- Both Drs. Ralph Moon and Joe Spurgeon have developed presentations on defensible inspection and report writing.
- Dr. Joe Lstiburek has historically opined about loss of generational/institutional memory. Every 20 years the next generation seemed to relearn what those who came before them already knows!
- Wonders about the role AI can play in improving training.
- Agrees on accuracy of basic curriculum and avoidance of the parroting of misinformation.
- When small infrared cameras became available many people who purchased them didn’t know how to use them. This led to development of thermography training and certification programs. Perhaps the thermography training model would work for mold investigation courses, and the use of precision moisture meters and cloud-based documentation?
- RIA has an online formal report writing course which is a prerequisite for advanced certification designations.

Z-MAN signing off

Trivia:

What US President’s pledge to help ensure safety of Americans on the land, air and sea was fulfilled on April 1, 1967?

Answer: Lyndon Johnson, NTSB

Answered by: Luis Suarez, RestorRight Bilingual Academy, Texas

Part 2