# JOEL-ANTHONY GRAY

**BSEE · CIH · CSP · CHMM · LC (pending) · CHP (pending)**

*Electromagnetic EMF & RF Environmental & Biomedical Consulting Detective*

*"The Unusual Problem Specialist"*

ScanTech Technical Consulting · Greater Dallas–Fort Worth · service to Austin, Houston, San Antonio & major cities nationwide in the USA and internationally

www.scantech7.com · director@scantech7.com · 214.912.4691

## PROFESSIONAL PROFILE

Expert troubleshooter and consulting detective in EMF / EMI and the epidemiology of bioelectromagnetics, with more than two decades of practice and thousands of field surveys for commercial & industrial clients, built on 40+ years of cross-domain technical work spanning RF and instrumentation, nanoscience research, photometric and lighting compliance, industrial hygiene, and environmental and biomedical assessment. Principal and sole practitioner of ScanTech Technical Consulting (est. 2002). Specialization in measured, field-verified data and the unusual interference and compliance problems that defeat conventional analysis.

## BOARD CERTIFICATIONS & CREDENTIALS

- **CIH** — Certified Industrial Hygienist, # 12082 CP (ABIH / Board for Global EHS Credentialing)
- **CSP** — Certified Safety Professional, # CSP-40131 (BCSP / ANAB)
- **CHMM** — Certified Hazardous Materials Manager, # 29984 (IHMM); meets the definition of an Environmental Professional under 40 CFR § 312.10
- **Certified Non-Ionizing Radiation (NIRAD) Safety** — RF & EMF, Colorado State University (2021)
- **Certified Radio & Instrumentation Technician** (Delphi)
- **CHP** — Certified Health Physicist **(pending)**
- **LC** — Lighting Certified **(pending)** NCQLP (National Council on Qualifications for the Lighting Professions)

## EDUCATION

- **B.S. Electrical Engineering with Honors** — University of Texas at Dallas; Nanoscience Technology concentration.
- **B.S. Bioengineering & Biomedical Engineering (pending)** — University of Texas at Dallas
- **Graduate Certificate in Industrial Hygiene** — Tulane School of Public Health & Tropical Medicine.
- **A.S. Electronic Telecommunications** — Eastfield College (DCCCD)

## ENGINEERING, BIOMEDICAL & NATURAL SCIENCE COURSEWORK

- Electromagnetics I (EE 4301)
- RF Circuit Design (EE 4368)
- RFID Industrial Applications (LMGT 1301)
- Bioengineering I & II (BMEN 1100 & 1208)
- Environmental Geology (GEOS 2310)
- Astrophysics I (PHYS 3380)
- Extragalactic Astrophysics (PHYS 4392)
- Advanced Microbiology (BIOL 2421)
- Medical Imaging Systems & Methods (BMEN 3380)
- Medical Device Development (BMEN 6330)
- Biomedical System Design (BMEN 3350)
- Pathophysiology - Biological Basis of Health & Disease (BIOL 2350)
- Immunoengineering / Immunology with an emphasis on COVID-19 (BMEN 4V95)

- Radiological Health (GEHS 6300)
- Principles of Industrial Hygiene (GEHS 6720)
- Meteorites, Comets & Asteroids (GEOS 2340)
- Oceanography (ISNS 2367 / GEOL 1345)
- Physical Geology (GEOS 1303)
- Weather & Climate: Meteorology (ISNS 2368)
- Global Climate Change (ISNS 2366)
- Natural Disasters: Volcanoes & Earthquakes (ISNS 2359)
- Organic Chemistry I & II (CHEM 2323 / 2325)
- Physical Chemistry & Thermodynamics in Biomedical Engineering (BMEN 3315)
- Introduction to Nanoscience & Nanotechnology (NANO 3301)
- Nanotechnology Research (1 year) (NANO 4V95 / 4V97)
- Nanoscale Fabrication Engineering (Integrated Circuit Technology) (EE 4330)
- Nanotech Instrumentation, Microscopy & Spectroscopy (NANO 3302)
- Plasma Technology / Plasma Science (PHYS 6383 / NANO 4391)
- Materials Science (NANO 3310)
- Advanced Electron Microscopy (MSEN 6340)
- Nanotechnology Internship (NANO 2486)
- Engineering Physiology of the Human Body (BMEN 3330)
- Engineered Biomaterials (BMEN 3318)
- Cell & Molecular Engineering (BMEN 3331)
- Biomaterials & Medical Devices (BMEN 4360)
- Human Nutrition (HLTH 1322)
- Medical Terminology (HLTH 3101)

## PHOTOMETRIC & LIGHTING COMPLIANCE

- As-built photometric surveys delivering measured, field-verified illuminance and uniformity certification, distinct from simulation-only deliverables
- Site lighting, parking, and code-compliance surveys; municipal inspection support across multiple North Texas and Central Texas jurisdictions.
- Spectral and color-quality characterization (CCT, CRI, TM-30, spectral power distribution) for interior, industrial, and cultural-institution environments.
- Museum and gallery lighting assessment: conservation-grade illuminance and UV/IR exposure measurement.

## ELECTROMAGNETIC, RF (RADIO FREQUENCY) & ENVIRONMENTAL CONSULTING

- EMI / interference investigation and mitigation for industrial, defense, and aerospace clients; AC & DC magnetic and electric field surveys, spectrum analysis, and RF mapping.
- Biomedical implant interference surveys for hospitals, clinics, and laboratories; patient-safety and equipment-interference assessment.
- Sound, noise, and light-level surveys for OSHA compliance; work-stoppage and dispute resolution with evidentiary-grade data collection.
- Indoor air quality surveys: radon, mold, particulate, biological contaminants, gases, chemicals, and toxins; OSHA Respirable Crystalline Silica compliance. **(LIMITED CONSULTING OFFERED)**

## BIOMEDICAL & NANOSCIENCE SKILLS

- Nanotechnology research and characterization: optical and SEM (FEI, Zeiss, JEOL, Hitachi), Dual-Beam FIB, EDX/EDS, RBS.
- Semiconductor failure analysis with electrical characterization (Keithley, Agilent, Zyvex / DCG nanoprobing, Gatan); DC and CV measurement.
- High-vacuum and UHV assembly and protocols; RF plasma cleaning, sputtering, deposition.
- Surface analysis: FTIR, Raman, AFM, XRD; cleanroom photolithography and nanofabrication (RAITH EBL); CMP and TEM sample prep.
- Liquid-Cell TEM for biological/chemical analysis (Hummingbird Scientific, Protochips); Biosafety Level 2 laboratory experience; teleradiology and physiological sensors (EKG, EMG).

## OTHER TECHNICAL SKILLS

- Applied AI Research, Technical Knowledge Systems and LLM-Assisted Analysis: ChatGPT-6 Astra Pro · Claude Fable 5.1 Max · Perplexity Pro
- Engineering & circuit simulation: MATLAB, LabVIEW, PSPICE / LTSPICE, SolidWorks; mechanical fabrication and machine-shop work.
- Embedded systems and programming: Java, C++, Assembly, BASIC Stamp, Arduino, G-code.
- Extensive network and IT experience; digital graphics, video and animation production; MS Office Suite; web design.

## PROFESSIONAL EXPERIENCE

**ScanTech Technical Consulting** — Dallas–Fort Worth, TX

*Principal / Consulting Detective* 2002 – Present

- Founded and operate a sole-practitioner technical consultancy serving Fortune 500 industrial, defense, aerospace, pharmaceutical, municipal, and cultural-institution clients across Texas, USA / North America and International.
- Deliver measured, field-verified photometric, electromagnetic, environmental, and biomedical assessments, with emphasis on the unusual interference and compliance problems that require unorthodox solutions.

**Natural Science Engineering and Research Lab (NSERL) & Cleanroom** — UTD, Richardson, TX

*Nanoscience Research & Lab Management* May 2011 – Feb 2013

- Conducted cleanroom projects in nano-biomedical technology, including in-vivo medical nanodevice research (nanorobotics) using FEI dual-beam SEM, EDX, JEOL TEM, and Rigaku XRD.

**Zyvex Instrumentation / DCG Systems** — Richardson, TX

*Nanotechnology Applications Technician* Oct 2007 – Sept 2010

- Nanoprobing, documentation, and research of semiconductor tools for sale to major chip manufacturers, supporting revenue exceeding $2 million; named second author on a scientific paper for an EBC technique.
- Operated SEMs (FEI, Zeiss, Hitachi) in high-vacuum environments; assembled complex nanomanipulator systems and accessories (plasma cleaner, ion gun, thermal stage, Keithley 4200, Gatan Digital Micrograph with Digiscan II).

## AFFILIATIONS & CONSULTING NETWORKS

- Illuminating Engineering Society (IES) - Full Member ID # 848773
- AIHA (American Industrial Hygiene Association) Full Member ID # 1151195
- Silverlight Research Consultant (since 2023)
- DeepBench MIT Consultant (since 2021)
- A.C. Associate Consultant for AEI Consultants | Environmental & Engineering Services (since 2016)
- P.A. Partner Associate for Partner Engineering & Science Inc. (since 2017)

## PREVIOUSLY HELD CREDENTIALS

- Mold Assessment Consultant (TX) # MAC1387 - to Aug 2022.
- AARST-NRPP Radon Residential Measurement Provider #108991 RT, and ARP Radon Professional with Multi-Family Measurement - to Jan 2023.
- BOSIET / HUET (CAEBS) and ExxonMobil Offshore Safety Pass (Sea Survival, Firefighting) - to 2023.

## REPRESENTATIVE COMMERCIAL & INDUSTRIAL CLIENTELE

**Manufacturing & Production: Automotive, Heavy Equipment Manufacturers, Steel Mills**

**General Contractors & Construction Firms**

**Pharmaceutical, Drug and DME (Durable Medical Equipment) Manufacturing**

**Hospitals and other Health Care Facilities**

**Engineering & Architectural Consulting Firms**

**Petrochemical including Refineries, Drilling Fields & Offshore Oil Rigs (both Upstream & Downstream)**

**Energy Production & Power Plants (Gas, Nuclear, Coal, Hydrogen) including High Voltage Electrical Lines & Substations**

**Renewable Energy including Solar & Wind Farms**

**Agricultural / Agrochemical**

**Semiconductor Fabrication / Manufacturing & Analysis**

**Food & Beverage Production including Beer Breweries, Cosmetic Goods Production**

**Warehousing & Storage**

**Corporate Headquarters, Real Estate, Property Management & Office Buildings**

**Financial & Insurance Companies**

**Nanotechnology Research & Manufacturing**

**Educational Institutions & Schools**

**Cellular Networks & Telecommunication Firms**