Lyle M. Gordon

San Francisco Bay Area · 847-400-4071 · lyle@lylegordon.ca

Qualifications

- Skilled self-starter and problem solver, capable of solving challenging engineering and scientific problems across disciplines and translating innovations to new products and scaling new solutions.
- Talented leader and communicator with project management, research, engineering, and product development experience. Built R&D team, mentored engineers and scientists and managed multi-year deliverables.
- Extensive materials and surface science knowledge, including many analytical techniques: SEM, TEM, HPLC, XPS, atom probe tomography, XRD, FTIR, optical profilometry, X-ray and optical coherence tomography, X-ray and optical spectroscopy, and more.
- Pragmatic, analytical scientist with track record of inovative materials development, characterization of complex systems and data analysis.
- Micro/nanofabrication experience, including anodization, electroplating, wet/dry etch, sol-gel, CVD, ALD and PVD.
- 15+ years experience in materials, chemistry, aerosols, life sciences and engineering across the medical device industry, academia and government, lab & manufacturing experience, and extensive publication record.

Experience

2021- **Materials Engineer**, Redwood Materials, Carson City, NV.

- Building first lithium ion battery copper foil plant in the USA based on recycled feedstocks to close loop on battery material supply chain.
- Establishing materials analytical labs and characterization methods for product development and QC; designing high speed inline metrology solutions.
- Defining product and feedstock requirements & specifications, SOPs, managing risk assesments (FMEA)
- Report directly to VP of product development, building R&D and analytical teams.

Nano Precision Medical, Emeryville, CA.

2019-2021 **Director of Research and Development**

- Established, managed, and mentored new R&D engineering team to develop, scale up and characterize anodic titanium oxide nanotube membranes.
- Identified and developed new approaches to solve unique materials fabrication and characterization challenges.
- Owned responsibility for timely execution of projects and continual improvement of processes and products. Defined user needs and requirements. Drove corrective actions, risk-assessments and root causes analysis.
- Worked cross-functionally (manufacturing/ops/quality/regulatory) through successful prototype builds and provided science & engineering expertise to other departments.
- Managed work with external firms and laboratories to supplement in-house resources.
- Identified new product opportunities and ideas and managed special projects.

2019 **Manager,** Process Research and Development

- Lead existing process research group; managed projects, engineers, scientists and technicians across multiple groups.
- Interim director of manufacturing until a new VP could be hired. Optimized manufacturing processes and documentation.

2017-2019 **Senior Scientist**
- Solved materials science and engineering problems, including failure analysis and troubleshooting manufacturing, to support product development.
- Developed drug formulations and characterized molecular and surface interactions.
- Interacted with quality and regulatory personnel.

2016-2017 **Materials Scientist**
- Supported materials characterization efforts including design and construction of custom instrumentation.
- Wrote internal reports and invention disclosures for IP protection.

2014-2016 **W.R. Wiley Distinguished Postdoctoral Fellow**, Microscopy Group
Environmental Molecular Sciences Lab, Pacific Northwest National Laboratory, Richland, WA.
Managed and operated by Battelle for the US Department of Energy
- Managed projects and conducted work for internal and external users. Solved complex problems across a range of disciplines and communicated the results.
- Led development of a multilayer nanoporous coating (sol-gel and PVD) for infrared optics to enable in situ investigation into the role of porous aerosols on atmospheric ice nucleation.

2008-2014 **PhD Candidate**, Biomineral Engineering Group
Northwestern University, Materials Science and Engineering, Evanston, IL.
- Applied advanced characterization tools to elucidate the nanostructure and chemistry of interfaces in mineralized biological tissues (teeth and bone). Communicated results in leading scientific journals.
- Discovered role of amorphous intergranular phases on tooth enamel mechanical, chemical and corrosion properties.
- Developed purification and spin coating process for multliayer few-nm thickness polysaccharide films for atom probe characterization

2012-2014 **Technology Consultant**, PreScouter, Chicago, IL.
- Technology scouter connecting corporate innovators to new technologies.

2007-2008 **Researcher**, Hybrid Materials Group
University of Toronto, Materials Science and Engineering Toronto, Canada.
- Designed, fabricated and characterized a microscale periodic cellular material using rapid prototyping and electrodeposition of nanocrystalline nickel coatings.

2005-2007 **Sunnybrook Health Sciences Centre**, Toronto, Canada.

Researcher, Advanced Regenerative Tissue Engineering Centre
- Characterization and modeling of viscoelastic response and cell-material interactions of a hydrogel for intervertebral disc tissue engineering.

Researcher, Orthopaedic Biomechanics Lab
- Developed and validated a biomechanical finite element model of pelvic fracture stability.
- Automated segmentation algorithm for X-ray CT scans of metastatic vertebrae.

Education

PhD, Materials Science and Engineering, *Northwestern University.* Evanston, IL.

B.A.Sc., Materials Science and Engineering, *University of Toronto.* Toronto, Canada.

Selected Peer Reviewed Publications

Gordon, L.M., Cohen, M.J., MacRenaris, K., Pasteris, J.D., Seda, T., Joester, D. "Amorphous Intergranular Phases Control the Properties of Tooth Enamel." *Science* 347, 6223 (2015).

Gordon, L.M., Joester, D. "Nano-Scale Chemical Tomography of Buried Organic-Inorganic Interfaces in the Chiton Tooth." *Nature* 469, 194-197 (2011).