Lyle M. Gordon

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Qualifications

- 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.
- 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.
- Extensive materials, aerosol, and surface science knowledge, including 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 materials development, characterization of complex systems and data analysis.
- Micro/nanofabrication experience, including anodization, wet/dry etch, sol-gel, CVD, ALD and PVD.
- 12+ years experience in materials, chemistry, aerosols, life sciences and engineering across the medical device industry, academia and government with extensive publication record and lab experience.

Experience

Nano Precision Medical, Emeryville, CA.

2019- **Director of Research and Development**

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

2019 **Manager,** Process Research and Development

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

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.

Bachelors of Applied Science with Honours, 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).