

# Lyle M. Gordon

[lyle@lylegordon.ca](mailto:lyle@lylegordon.ca)

## Qualifications

- Experience in a fast paced start up environment, including leadership roles on projects
- Ten years of experience in materials and chemistry across academia, government and the medical device industry.
- Skilled problem solver, capable of solving engineering and scientific problems across multiple disciplines.
- Extensive technical proficiency and lab experience with materials and chemical characterization techniques including optical and electron microscopy, atom probe tomography, vibrational and X-ray spectroscopy and adsorption porosimetry.

## Experience

- 2017- **Senior Scientist**, Nano Precision Medical, Emeryville, CA.
- Solve materials science and engineering problems to support development of a titanium oxide nanotube membrane sustained release drug delivery device.
  - Conduct failure analysis and troubleshoot manufacturing processes.
  - Develop drug formulation and measure drug-membrane interactions.
  - Manage engineers, scientists and technicians across multiple groups.
  - Interact with quality and regulatory personnel.
  - Write internal reports and invention disclosures.
- 2016-2017 **Materials Scientist**, Nano Precision Medical, Emeryville, CA.
- Supported materials characterization efforts including design and construction of a custom vapor condensation permeation pore size measurement tool.
- 2014-2016 **W.R. Wiley Distinguished Postdoctoral Fellow**, Microscopy Group, Environmental Molecular Sciences Laboratory, Pacific Northwest National Laboratory, Richland, WA.
- 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 thin film model system and characterization tools to study the role of nanoporous aerosols on atmospheric ice nucleation.
- 2008-2014 **PhD Candidate**, Biomineral Engineering Group, Materials Science and Engineering Northwestern University, 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.
  - Identified role of amorphous intergranular phases on tooth enamel mechanical, chemical and corrosion properties.
- 2012-2014 **Technology Consultant**, PreScouter, Chicago, IL.
- Technology scouter connecting corporate innovators to new technologies.
- 2007-2008 **Researcher**, Hybrid Materials Group, Materials Science and Engineering University of Toronto, Toronto, ON.
- Designed, fabricated and characterized a microscale periodic cellular material using rapid prototyping and electrodeposition of nanocrystalline nickel coatings.
- 2005-2007 **Researcher**, Orthopaedic Biomechanics Lab & Advanced Regenerative Tissue Engineering Centre Sunnybrook Health Sciences Centre, Toronto, ON.
- Mechanical characterization, modeled viscoelastic response and evaluated cell-material interactions of a hydrogel for intervertebral disc tissue engineering.
  - Developed and validated a biomechanical finite element model of pelvic fracture stability.
  - Automated segmentation algorithm for X-ray CT scans of metastatic vertebrae.

## Education

- 2014 **PhD**, Materials Science and Engineering, *Northwestern University*. Evanston, IL.
- 2008 **Bachelors of Applied Science with Honours**, Materials Science and Engineering, *University of Toronto*. Toronto, ON.

## Selected Awards

- 2014 W.R. Wiley Distinguished Postdoctoral Fellowship, Pacific Northwest National Laboratory.
- 2013 Microscopy & Microanalysis Presidential Scholar Award, Microscopy Society of America.
- 2008-2012 Postgraduate Scholarship, Masters & Doctorate. National Science and Engineering Research Council of Canada.

## Selected Peer Reviewed Publications

- 2018 White, L.F., Kizovski, T.V., Tait, K.T., Langelier, B., **Gordon, L.M.**, Harlov, D., Norberg, N. "Nanoscale chemical characterisation of phase separation, solid state transformation, and recrystallization in feldspar and maskelynite using atom probe tomography" *Contributions to Mineralogy and Petrology*, 173, 10, 87.
- 2018 Sowoidnich, T., **Gordon, L.M.**, Naber, C., Bellman, F., Neubauer, J., Joester, D. "A contribution to the characterization of the silicate-water interface – Part I: Implication of a new polished sample hydration technique." *Micron*, 112, 63.
- 2018 Devaraj, A., Perea, D.E., Liu, J., **Gordon, L.M.**, Prosa, T.J., Parikh, P., Diercks, D.R., Meher, S., Kolli, R.P., Meng, Y.S., Thevuthasan, S., "Three-dimensional nanoscale characterisation of materials by atom probe tomography." *International Materials Reviews* 63, 2.
- 2016 Nune, S. K., Lao, D., Heldebrant, D. J., Liu, J., Olszta, M. J., Kukkadapu, R., **Gordon, L.M.**, Nandasiri, M. I., Gotthold, D. W., Schaef, H. T. "Anomalous Water Expulsion from Carbon Rods at High Humidity." *Nature Nanotechnology* 11, 791.
- 2015 **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).
- 2015 **Gordon, L.M.**, Joester, D. "Mapping residual organics and carbonate at grain boundaries and in the amorphous interphase in mouse incisor enamel." *Frontiers in Physiology* 6, 57.
- 2014 Schreiber, D. K., Chiaramonti, A. N., **Gordon, L.M.**, Kruska, K. "Applicability of post-ionization theory to laser-assisted field evaporation" *Appl Phys Lett* 105, 244106 (2014).
- 2014 **Gordon, L.M.**, Roman, J., Everly, R.M., Cohen, M.J., Wilker, J.J., Joester, D. "Selective Formation of Metastable Ferrihydrite in the Chiton Tooth." *Angewandte Chemie* 53, 11506 – 11509 (2014).
- 2012 **Gordon, L.M.**, Tran, L., Joester, D. "Atom probe tomography of apatites and bone-type mineralized tissues." *ACS nano* 6, 10667-10675 (2012).
- 2011 **Gordon, L.M.**, Joester, D. "Nano-Scale Chemical Tomography of Buried Organic-Inorganic Interfaces in the Chiton Tooth." *Nature* 469, 194-197 (2011).
- 2009 **Gordon, L.M.**, Bouwhuis, B.A., Suralvo, M., McCrea, J.L., Palumbo, G., Hibbard, G.D. "Micro-truss nanocrystalline Ni hybrids." *Acta Materialia* 57, 932-939 (2009).
- 2009 Leung, A., **Gordon, L.M.**, Skrinkas, T., Szwedowski, T., Whyne, C.M. "Effects of bone density alterations on strain patterns in the pelvis: application of a finite element model." *Proc Inst Mech Eng H: J Eng Med* 223, 965-979 (2009).

References and full academic curriculum vitae available upon request.