MICHAEL G. GOMEZ

Curriculum Vitæ

Dept. of Civil and Environmental Engineering
132G More Hall
Box 352700
Seattle, WA 98195

Phone: (206) 543-7614
Fax: (206) 543-1543
Email: mggomez@uw.edu

EDUCATIONAL HISTORY

University of California, Davis, CA
Civil and Environmental Engineering, Ph.D.
March 2017
Dissertation: *"Up-scaling of Microbially-Induced Calcite Precipitation Using Native Soil Microorganisms"*

University of California, Davis, CA
Civil and Environmental Engineering, M.S.
June 2013
Thesis: *"Field Scale Bio-cementation for the Improvement of Loose Sands"*

University of California, Davis, CA
Civil and Environmental Engineering, B.S.
December 2011

EMPLOYMENT HISTORY

University of Washington
Seattle, WA, USA
Assistant Professor, 2017 to Present

University of California
Davis, CA, USA
Graduate Researcher, 2013 to 2017

Geosyntec Consultants
Oakland, CA, USA
Geotechnical Engineering Intern, 2012

USDA Forest Service
Bend, OR, USA
Project Engineering Intern, 2009 to 2011

AWARDS AND HONORS

- National Science Foundation (NSF) Faculty Early Career Development Program (CAREER) Award, 2021, NSF
- Exception Peer Reviewer, 2020, Journal of *Geotechnical and Geological Engineering*
- Faculty Appreciation for Career Education & Training (FACET) Award, 2020, UW COE
- Zuhair A. Munir Best College of Engineering Dissertation Honorable Mention, 2018, UC Davis

- Outstanding Outreach Volunteer Award, 2016, NSF Center for Bio-mediated and Bio-inspired Geotechnics
- Telford Premium Journal Prize, 2016, Institution of Civil Engineers (UK)
- I.M. Idriss Award for Excellence in Geotechnical Engineering, 2014, UC Davis
- Graduate Fellowship, 2013, Fugro Consultants
- Certificate of Merit, 2011, USDA Forest Service, Deschutes National Forest
- The First Tee Achiever of the Year Award, 2004, Royal Bank of Scotland (RBS)

PUBLICATIONS

Refereed archival journal publications

Note: My graduate students[1], My undergraduate students[2].

1. Lee, M.[1], **Gomez, M.G.**, Graddy, C.M.R., San Pablo, A.C.M., DeJong, J.T., & Nelson, D.C. (2021). Control of Stimulated Urea Hydrolysis Rates During Bio-cementation Using Indigenous Microorganisms. *Acta Geotechnica,* In Final Preparation.

2. Humire, F., Lee, M.[1], Ziotopoulou, K., **Gomez, M.G.** (2021). Development and evaluation of pre-conditioning protocols of sand specimens in constant-volume cyclic direct simple shear tests. *ASTM Geotechnical Testing Journal (GTJ)*, In Final Preparation.

3. El Kortbawi, M., Ziotopoulou, K., **Gomez, M.G.**, Lee, M.[1], (2020). Mechanical Behaviour of Artificially Cemented Sands: Experimental and Numerical Developments. *Acta Geotechnica,* Under Review.

4. Lee, M.[1], **Gomez, M.G.,** El Kortbawi, M., Ziotopoulou, K. (2021). Evaluating the Liquefaction Triggering and Post-Triggering Behavior of Lightly Cemented Sands Using Microbially Induced Calcite Precipitation (MICP). *Journal of Geotechnical and Geoenvironmental Engineering*, Under Review.

5. Raymond, A.J., Kendall, A., DeJong, J.T., **Gomez, M.G.**, & San Pablo, A.C.M., Lee, M.[1], Graddy, C.M.R., Nelson, D.C. (2020). Life Cycle Sustainability Assessment of Microbially Induced Calcite Precipitation (MICP) Bio-cementation Techniques. *Environmental Research: Infrastructure and Sustainability,* Under Review.

6. Graddy, C.M.R., **Gomez, M.G.**, DeJong, J.T., & Nelson, D.C. (2020). Native Bacterial Community Convergence in Augmented and Stimulated Ureolytic MICP Biocementation. *Environmental Science & Technology,* Under Review.

7. San Pablo, A.C.M, Lee, M.[1], Graddy, C.M.R., Kolbus, C.M.[2], Khan, M., Zamani, A., Martin, N., Acuff, C., DeJong, J.T., **Gomez, M.G.**, & Nelson, D.C. (2020). Meter-scale Bio-cementation Experiments to Advance Process Control and Reduce Impacts: Examining Spatial Control, Ammonium By-product Removal, and Chemical Reductions. *Journal of Geotechnical and Geoenvironmental Engineering,* 146(11), 04020125. https://ascelibrary.org/doi/abs/10.1061/%28ASCE%29GT.1943-5606.0002377 Citations: 5 (Google Scholar)

8. Lee, M.[1], **Gomez, M.G.**, San Pablo, A.C.M., Kolbus, C.M.[2], Graddy, C.M.R., DeJong, J.T., & Nelson, D.C. (2019). Investigating Ammonium By-product Removal for Ureolytic

Bio-cementation Using Meter- scale Experiments. *Scientific Reports*, *9*(1), 1-15. https://www.nature.com/articles/s41598-019-54666-1 Citations: 11 (Google Scholar)

9. **Gomez, M.G.**, Graddy, C.M.R., DeJong, J.T., & Nelson, D.C. (2019). Biogeochemical Changes During Bio-cementation Mediated by Stimulated and Augmented Ureolytic Microorganisms. *Scientific Reports*, *9*(1), 1-15. https://www.nature.com/articles/s41598-019-47973-0 Citations: 10 (Google Scholar)

10. Darby, K.M., Hernandez, G.L., DeJong, J.T., Boulanger, R.W., **Gomez, M.G.**, & Wilson, D.W. (2019). Centrifuge model testing of liquefaction mitigation via microbially induced calcite precipitation. *Journal of Geotechnical and Geoenvironmental Engineering*, *145*(10), 04019084. https://ascelibrary.org/doi/full/10.1061/%28ASCE%29GT.1943-5606.0002122 Citations: 10 (Google Scholar)

11. Martinez, A., Huang, L., & **Gomez, M.G.** (2018). Thermal conductivity of MICP-treated sands at varying degrees of saturation. *Géotechnique Letters*, 1-7. https://www.icevirtuallibrary.com/doi/abs/10.1680/jgele.18.00126 Citations: 3 (Google Scholar)

12. **Gomez, M.G.**, DeJong, J.T., Anderson, C.M. (2018). Effect of Bio-cementation on Geophysical and Cone Penetration Measurements in Sands. *Canadian Geotechnical Journal*. http://www.nrcresearchpress.com/doi/10.1139/cgj-2017-0253 Citations: 13 (Google Scholar)

13. Graddy, C. M., **Gomez, M. G.**, Kline, L. M., Morrill, S. R., DeJong, J. T., & Nelson, D. C. (2018). Diversity of Sporosarcina-like Bacterial Strains Obtained from Meter-Scale Augmented and Stimulated Biocementation Experiments. *Environmental science & technology*, *52*(7), 3997-4005. https://pubs.acs.org/doi/abs/10.1021/acs.est.7b04271 Citations: 17 (Google Scholar)

14. Nassar, M. K., Gurung, D., Bastani, M., Ginn, T. R., Shafei, B., **Gomez, M.G.**, Graddy, C. M. R., Nelson, D. C., DeJong, J. T. (2018). Large-scale Experiments in Microbially Induced Calcite Precipitation (MICP): Reactive Transport Model Development and Prediction. *Water Resources Research*, 54. http://onlinelibrary.wiley.com/doi/10.1002/2017WR021488/full Citations: 26 (Google Scholar)

15. **Gomez, M.G.,** Graddy, C.R.M., DeJong, J.T., Nelson, D.C., Tsesarsky, M. (2018). Stimulation of Native Microorganisms for Bio-cementation at Field Scale Treatment Depths. *Journal of Geotechnical and Geoenvironmental Engineering,* 144(1). https://ascelibrary.org/doi/abs/10.1061/%28ASCE%29GT.1943-5606.0001804 Citations: 50 (Google Scholar)

16. **Gomez, M.G.,** Anderson, C. M., Graddy, C. M., DeJong, J. T., Nelson, D. C., & Ginn, T. R. (2016). Large-scale comparison of bioaugmentation and biostimulation approaches for biocementation of sands. *Journal of Geotechnical and Geoenvironmental Engineering*, *143*(5), 04016124. https://ascelibrary.org/doi/full/10.1061/%28ASCE%29GT.1943-5606.0001640 Citations: 84 (Google Scholar)

17. **Gomez, M.G.,** Martinez, B.C., DeJong, J.T., Hunt, C.E., deVlaming, L.A., Major, D.W., and Dworatzek, S.M. (2015). Field Scale Bio-cementation Tests to Improve Sands. *Ground Improvement*, 168(3), pp. 206-216. http://www.icevirtuallibrary.com/doi/pdf/10.1680/grim.13.00052 Citations: 114 (Google Scholar)

Conference proceedings and other non-journal articles

Fully refereed publications

Note: My graduate students[1], My undergraduate students[2].

1. **Gomez, M.G.,** Lee, M.[1], San Pablo, A.C., Graddy, C.M.R., DeJong, J.T., Nelson, D.C. (2021). "Enhancing the uniformity and extent of bio-cementation soil improvement: physical experiments and reactive transport modelling", Proceedings of the 20th International Conference on Soil Mechanics and Geotechnical Engineering, Sydney 2021. In Final Preparation.

2. Martinez, A., Huang, L., & **Gomez, M.G**. (2020). "Enhancement of the thermal conductivity of sands via microbially-induced calcite precipitation", 2nd International Conference on Energy Geotechnics, San Diego, CA. In E3S Web of Conferences (Vol. 205, p. 09011). EDP Sciences. https://www.e3s-conferences.org/articles/e3sconf/abs/2020/65/e3sconf_icegt2020_09011/e3sconf_icegt2020_09011.html Citations: 0 (Google Scholar)

3. Lee, M.[1], El Kortbawi, M., **Gomez, M.G.**, Ziotopoulou, K., (2020). "Examining the Liquefaction Resistance of Lightly Cemented Sands Using Microbially Induced Calcite Precipitation (MICP)", GeoCongress 2020 Technical Papers, 13 pp. https://ascelibrary.org/doi/pdf/10.1061/9780784482834.007 Citations: 2 (Google Scholar)

4. Burdalski, R.J.[1], **Gomez, M.G.** (2020). "Investigating the effect of microbial activity and chemical concentrations on the mineralogy and morphology of ureolytic bio-cementation", GeoCongress 2020 Technical Papers, 13 pp. https://ascelibrary.org/doi/pdf/10.1061/9780784482834.010 Citations: 1 (Google Scholar)

5. San Pablo, A.C., Lee, M.[1], Graddy, C.M.R., Kolbus, C.M.[2], Zamani, A., Khan, M., Acuff, C., Martin, N., **Gomez, M.G.,** DeJong, J.T., Nelson, D.C. (2020). "Examining Spatial Control, Ammonium By-Product Removal, and Chemical Reductions for Bio-Cementation Soil Improvement Using Meter-Scale Experiments", GeoCongress 2020 Technical Papers, 11 pp. https://ascelibrary.org/doi/10.1061/9780784482780.044 Citations: 1 (Google Scholar)

6. Lee, M.[1], Kolbus, C.M.[2], Yepez, A.D[2], **Gomez, M.G.** (2019). "Investigating Ammonium By-Product Removal Following Stimulated Ureolytic Microbially-Induced Calcite Precipitation", Geo-Congress 2019: Earthquake Engineering and Soil Dynamics Technical Papers, 12 pp. https://ascelibrary.org/doi/abs/10.1061/9780784482100.021 Citations: 7 (Google Scholar)

7. El Kortbawi, M., Ziotopoulou, K., Lee, M.[1], **Gomez, M.G.** (2019). "Validation of a Bounding Surface Plasticity Model against the Experimental Response of (Bio-) Cemented Sands", Geo-Congress 2019: Earthquake Engineering and Soil Dynamics Technical

Papers, 10 pp. https://ascelibrary.org/doi/abs/10.1061/9780784482100.021 Citations: 1 (Google Scholar)

8. Darby, K.M., Hernandez, G.L., **Gomez, M.G.**, DeJong, J.T., Wilson, D.M., Boulanger, R.W. (2018). "Centrifuge Model Testing of Liquefaction Mitigation via Microbially Induced Calcite Precipitation", Geotechnical Earthquake Engineering and Soil Dynamics V Technical Papers, 11 pp. https://ascelibrary.org/doi/10.1061/9780784481455.012 Citations: 0 (Google Scholar)

9. **Gomez, M.G.**, & DeJong, J.T (2017). "Engineering Properties of Bio-cementation Improved Sandy Soils", Grouting 2017 Technical Papers, 11 pp. https://ascelibrary.org/doi/abs/10.1061/9780784480793.003 Citations: 16 (Google Scholar)

10. DeJong, J.T, **Gomez, M.G.,** Waller, J.T., Viggiani G. (2017). "Influence of Bio-Cementation on Shearing Behavior of Sand using X-ray Computed Tomography", GeoFrontiers 2017 Technical Papers, 12 pp. http://ascelibrary.org/doi/abs/10.1061/9780784480472.093 Citations: 11 (Google Scholar)

11. **Gomez, M.G.,** DeJong, J.T., Anderson, C.M., Nelson, D.C., Graddy, C.M. (2016). "Large-Scale Bio-cementation Improvement of Sands", Geotechnical and Structural Engineering Congress 2016 Technical Papers, 9 pp. http://ascelibrary.org/doi/abs/10.1061/9780784479742.079 Citations: 10 (Google Scholar)

12. DeJong, J.T., Proto, C., Kuo, M., and **Gomez, M.G.** (2014). "Bacteria, Bio-films, and Invertebrates… the Next Generation of Geotechnical Engineers?", GeoCongress 2014 Technical Papers, pp. 3959-3968. http://ascelibrary.org/doi/abs/10.1061/9780784413272.384 Citations: 12 (Google Scholar)

13. **Gomez, M.G.,** Anderson, C.M., DeJong, J.T., Nelson, D.C., and Lau, X.H. (2014). "Stimulating In-Situ Soil Bacteria for Bio-Cementation of Sands", GeoCongress 2014 Technical Papers, pp. 1674-1682. http://ascelibrary.org/doi/abs/10.1061/9780784413272.164 Citations: 39 (Google Scholar)

14. **Gomez, M.G.**, DeJong, J.T., Martinez, B.C., Hunt, C.E., deVlaming, L.A., Major, D.W., and Dworatzek, S.M. (2013). "Bio-mediated Soil Improvement Field Study to Stabilize Mine Sands", Géo-Montréal 2013 Technical Papers, 8 pp. https://www.researchgate.net/publication/272090556_Bio-mediated_Soil_Improvement_Field_Study_to_Stabilize_Mine_Sands Citations: 9 (Google Scholar)

Refereed by abstract only

Note: My graduate students[1], My undergraduate students[2].

1. **Gomez, M.G.,** Lee, M. [1], Kolbus, C.M. [2], Yepez, A.D. [2] (2018). "Examining Nitrogen By-Product Management for Microbially-Induced Calcite Precipitation via Stimulated Microbial Ureolysis", Proceedings of the International Society for Porous Media (Interpore) Annual Conference 2018, New Orleans, LA.

2. **Gomez, M.G.,** Graddy, C.M.R., DeJong, J.T., Nelson, D.C. (2018). "Investigating Treatment Techniques for Stimulated Ureolytic Microbially-Induced Calcite Precipitation

at Field Scale Treatment Depths", Proceedings of the International Society for Porous Media (Interpore) Annual Conference 2018, New Orleans, LA.

3. San Pablo, A.C., Graddy, C.M.R., **Gomez, M.G.,** DeJong, J.T., Nelson, D.C. (2018). "Optimization of Treatment Techniques for Up-scaling of Stimulated Ureolytic Microbially-Induced Calcite Precipitation", Proceedings of the International Society for Porous Media (Interpore) Annual Conference 2018, New Orleans, LA.

4. Graddy, C.M.R., **Gomez, M.G.**, DeJong, J.T., Nelson, D.C. (2018). "High Phylogenetic and Physiological Diversity of Ureolytic Bacteria in Native Soils Bio-stimulated for MICP", Proceedings of the International Society for Porous Media (Interpore) Annual Conference 2018, New Orleans, LA.

5. **Gomez, M.G.**, & DeJong, J. T. (2017). "Influence of Soil Microorganisms on Biogeochemical Reaction Rates and Calcite Precipitation Microstructure in Bio-cemented Sands", Proceedings of the ASCE Engineering Mechanics Institute (EMI) Conference 2017, San Diego, CA.

6. Nassar, M.K., Gurung, D., Bastani, M., **Gomez, M.G.**, Graddy, C. M. R., Nelson, D. C., , & Ginn, T. R. (2016). "Mathematical Modeling of MICP in Meter-Scale 2-D Transient Reactive Transport Experiments", Proceedings of the European Association of Geochemistry and of the Geochemical Society 2016 Goldschmidt Conference, Yokohama, Japan.

Technical Reports

1. **Gomez, M.G.,** DeJong, J.T., Martinez, B.C., Hunt, C.E., deVlaming, L.A., Major, D.W., and Dworatzek, S.M. (2013). "Final Report: Cameco MICP Field Trials." Geosyntec Consultants, Oakland, CA, 61 pp.

Theses & Dissertations

1. Burdalski, R.J., II.[1] (2020). *Investigating the effect of biological and chemical factors on the reaction kinetics and mineralogy of ureolytic bio-cementation*. M.S. Thesis, University of Washington, 163 pp.
2. **Gomez, M.G.** (2013). *Field scale bio-cementation for the improvement of loose sands.* University of California, Davis, 63 pp. https://search.proquest.com/docview/1449817738?accountid=14784 Citations: 3 (Google Scholar)
3. **Gomez, M.G.** (2017). *Up-scaling of bio-cementation soil improvement using native soil microorganisms.* University of California, Davis, 335 pp. https://search.proquest.com/docview/1906984165?accountid=14784 Citations: 3 (Google Scholar)

Other Publications

1. **Gomez, M.G.** (2019). "Bio-mediated Geotechnical Technologies for Natural Hazards Engineering", Proceedings of the International Workshop to Develop Research Campaigns, Interdisciplinary Teams and Disruptive Technologies for the NHERI 5-Year Science Plan for Natural Hazards, Washington, DC. Accepted.

OTHER SCHOLARLY ACTIVITY

Invited lectures and seminars.

1. Vancouver Geotechnical Society (VGS) Invited Lecture, Vancouver, B.C., Canada, Zoom Presentation, "*Bio-cementation for Mitigation of Earthquake-induced Soil Liquefaction.*", February 10th, 2021.

2. International Conference on Microbial Biotechnology in Construction Materials and Geotechnical Engineering (MBCMG2020), Southeast University, Nanjing, China., Zoom Presentation, "*Effect of Biogeochemical Factors on the Mineralogy of Ureolytic Bio-cementation.*", November 7th, 2020.

3. Northwest EcoBuilding Guild Educational Session: Managing Soil Carbon, Seattle, WA., Zoom Presentation, *"Biogeotechnical Solutions for Sustainable Civil Infrastructure."*, September 24th, 2020.

4. Oregon State University, Corvallis, OR., "*Bio-cementation for Mitigation of Earthquake-induced Soil Liquefaction.*", January 31st, 2020.

5. NHERI Science Workshop for Natural Hazards IDEA Presentation, Washington, D.C., "*Bio-mediated Geotechnical Technologies for Natural Hazards Engineering.*", March 18th, 2019.

6. University of Strathclyde, Glasgow, Scotland, UK., *"Up-scaling of Bio-cementation Soil Improvement using Native Soil Microorganisms."*, June 8th, 2018.

7. ASCE Seattle Geo-Institute Chapter 34th Annual Spring Seminar on Ground Improvement, Seattle, WA., "*Up-scaling Bio-mediated Calcite Precipitation for Improvement of Granular Soils.*", April 22nd, 2017.

8. ASCE Geotechnical Frontiers 2017, In Situ Modification of Soil Properties using Biological Mechanisms Panel Discussion, Orlando, FL., "*Role of Native Soil Microorganisms in Bio-mediated Soil Improvement.*", March 14th, 2017.

Presentations given at conferences.

1. **Lee, M.**[1], El Kortbawi, M., Gomez, M.G., Ziotopoulou, K., (2020). "Examining the Liquefaction Resistance of Cemented Sands Using Microbially Induced Calcite Precipitation (MICP) and Gypsum", *ASCE GeoCongress 2020*, Minneapolis, MN. February 27th, 2020.

2. **Burdalski, R.**[1], Gomez, M.G. (2020). "Investigating the Effects of Biogeochemical Conditions During Microbially Induced Calcite Precipitation (MICP) Soil Improvement", *ASCE GeoCongress 2020*, Minneapolis, MN. February 27th, 2020.

3. **Lee, M.**[1], Kolbus, C.M.[2], Yepez, A.D.[2], Gomez, M.G., "Investigating Ammonium By-Product Removal Following Stimulated Ureolytic Microbially-Induced Calcite Precipitation", *ASCE GeoCongress 2019*, Philadelphia, PA. March 26th, 2019.

4. **Gomez, M.G.,** Graddy, C.M.R., DeJong, J.T., Nelson, D.C., "Stimulation of Native Microorganisms for Bio-cementation at Field Scale Treatment Depths", *International Society for Porous Media (Interpore) Annual Conference 2018*, New Orleans, LA. May 16th, 2018.

5. **Gomez, M.G.** and DeJong, J.T., "Effect of (Bio-)cementation on Vs & Cone Penetration Measurements in Sands.", *Performance Based Design (PBD) III Conference 2017*, Vancouver, BC, Canada. July 17th, 2017.

6. **Gomez, M.G.** and DeJong, J.T., "Engineering Properties of Bio-cementation Improved Sandy Soils.", *ASCE Grouting Conference 2017*, Honolulu, HI. July 10th, 2017.

7. **Gomez, M.G.,** "Influence of Soil Microorganisms on Engineering Properties, Reaction Rates, and Microstructure of Bio-cemented Sands.", *ASCE Engineering Mechanics Institute Conference 2017*, San Diego, CA. June 7th, 2017.

8. DeJong, J.T, **Gomez, M.G.,** Waller, J.T., Viggiani G., "Influence of Bio-Cementation on Shearing Behavior of Sand using X-ray Computed Tomography." *Geotechnical Frontiers 2017*, Orlando, FL. March 14th, 2017.

9. **Gomez, M.G.,** DeJong, J.T., Anderson, C.M., Nelson, D.C., Graddy, C.M. "Large Scale Bio-Cementation Improvement of Sands." *Geotechnical and Structural Engineering Congress 2016*, Phoenix, AZ. February 16th, 2016.

10. **Gomez, M.G.,** and DeJong, J.T. "Recent Developments in Microbially-Induced Calcite Precipitation for Soil Improvement.", *BioGeoCivil Engineering Summit 2015*, Delft University of Technology, Delft, Netherlands. November 18th, 2015.

11. **Gomez, M.G.,** Anderson, C.M., DeJong, J.T., Nelson, D.C., and Lau, X.H. "Stimulation of Native Bacteria for Bio-Cementation of Sands", *GeoCongress 2014*, Atlanta, GA. February 23th, 2014.

Other presentations.

1. **Gomez, M.G.** *"The Emerging Field of Biogeotechnics"*, *UW "Research Exposed!" Course (GEN 391I),* Zoom Presentation, October 21st, 2020.

2. **Gomez, M.G.** *"The Emerging Field of Biogeotechnics: UW Biogeotechnics Laboratory."*, *UW College of Engineering SEEDS Program,* Zoom Presentation, September 17th, 2020.

3. **Gomez, M.G.** *"Bio-mediated Geotechnical Technologies for Soil Improvement."*, *Landau Associates*, Edmonds, WA. January 24th, 2020.

4. **Gomez, M.G.** "*Bio-mediated Soil Improvement Technologies for Environmentally-Conscious Geotechnical Ground Improvement*.", *Shannon & Wilson, Inc.*, Seattle, WA June 20th, 2019.

5. **Gomez, M.G.** "*Bio-cementation for Mitigation of Earthquake-induced Soil Liquefaction*.", *Golder Associates*, Vancouver, B.C. May 30th, 2019.

6. **Lee, M.**[1], Gomez, M.G. "*Investigating Ammonium By-Product Management for Bio-Cementation Soil Improvement*.", *Pacific Northwest Geotechnical Graduate Student Symposium*, Seattle, WA. April 12th, 2019.

7. **Gomez, M.G.** "Up-scaling of Bio-cementation Soil Improvement using Native Soil Microorganisms.", *Ph.D. Exit Seminar*, Davis, CA. March 9th, 2017.

8. **Gomez, M.G.** "Biogeochemical Changes during Bio-Cementation via Microbial Ureolysis in Sands." *Center for Bio-mediated and Bio-Inspired Geotechnics (CBBG) Invited Webinar*, Davis, CA. February 17th, 2017.

9. **Gomez, M.G.** "Stimulation of Native Microorganisms for MICP at Field Scale Treatment Depths." *Geotechnical Graduate Student Society (GGSS) at UC Davis Lunchtime Seminar*, Davis, CA. March 10th, 2016.

10. **Gomez, M.G.,** and DeJong, J.T. "Large-scale Comparison of Approaches to Bio-Cementation Improvement of Sands.", *Geotechnical Graduate Student Society (GGSS) at UC Davis Round Table 2015 Event*, Davis, CA. April 10th, 2015.

11. **Gomez, M.G.,** Anderson, C.M., and DeJong, J.T. "Large-scale Comparison of Approaches to Bio-Cementation Improvement of Sands.", *San Francisco ASCE Geo-Institute Graduate Student Research Presentation Event,* Oakland, CA. March 24th, 2015.

12. **Gomez, M.G.,** and DeJong, J.T. "Field Scale Bio-Cementation for Improvement of Sands at a Mine Site", *Geotechnical Graduate Student Society (GGSS) at UC Davis Lunchtime Seminar*, Davis, CA. November 8th, 2012.

Professional society memberships.

- Canadian Geotechnical Society (2019 – Present)
- Clay Minerals Society (2019 – Present)
- International Society for Soil Mechanics and Geotechnical Engineering (2019 – Present)
- American Geophysical Union (AGU) (2018 – Present)
- International Society of Porous Media (2018 - Present)
- United States Society on Dams (2016 - Present)
- Center for Bio-mediated and Bio-inspired Geotechnics (2015 - Present)
- ASCE Geo-Institute (2014 - Present)

Other.

- Technical journal paper reviewer for:
  - *Marine Georesources & Geotechnology*
  - *Water, Air, & Soil Pollution*
  - *Journal of Geotechnical and Geoenvironmental Engineering*
  - *ICE Environmental Geotechnics*
  - *Engineering Geology*
  - *Applied Microbiology and Biotechnology*
  - *Canadian Geotechnical Journal*
  - *Geotechnical and Geological Engineering*
  - *Acta Geotechnica*
  - *Geomicrobiology Journal*
  - *Géotechnique*

- *Geophysical Journal International*
- *ASCE Journal of Materials in Civil Engineering*
- *ASTM Geotechnical Testing Journal*
- *Géotechnique Letters*
- *Soils and Foundations*
- *Water Research*
- *Geomechanics for Energy and the Environment*
- *Environmental Science and Technology*
- *Applied and Environmental Microbiology*
- *Nature Scientific Reports*
- *Computers and Geotechnics*

- Technical conference paper reviewer for:
  - *ASCE International Foundations Congress and Equip. Expo 2021 (IFCEE 2021)*
  - *ASCE GeoCongress 2020*
  - *ASCE GeoCongress 2019*
  - *ASCE International Foundations Congress and Equip. Expo 2018 (IFCEE 2018)*
  - *ASCE Geotechnical Earthquake Engineering and Soil Dynamics V (GEESDV)*
  - *ASCE & CGJ 3rd International Conference on Performance-based Design in Earthquake Geotechnical Engineering (PBD-III)*
  - *ASCE Geotechnical Frontiers 2017*
  - *ASCE 2nd Pan-American Conference on Unsaturated Soils (PanAm-UNSAT 2017)*

GRADUATE STUDENTS

Current Doctoral Students

- Minyong Lee, Chair, Research Topic: "Up-scaling of Ureolytic Bio-cementation for Liquefaction Mitigation and Assessment of the Dynamic Behavior of Cemented Geo-materials."

Chaired Masters Degrees

- Robert Burdalski, Chair, Research Topic: "Investigating the Effect of Biological and Chemical Factors on the Reaction Kinetics and Mineralogy of Ureolytic Bio-cementation." – M.S. June 2020

Current Masters Students

- Samantha Muchongwe, Chair, Research topic: "Colloidal Silica Precipitation for Liquefaction Mitigation"
- Bruna Gabrielly Ribeiro, Chair, Research topic: "Life-Cycle Performance of Bio-cementation Soil Improvement: Long-term Performance and Degradation"
- Andrew Gregovich, Chair, Research topic: "Low-impact Soil Improvement via Chemical Assisted Calcium Carbonate Precipitation"

Other significant student supervision

- Undergraduate Research Advisor: Dellen Behrend (June 2020 – Present)
- Graduate Research Advisor: Carson Cheung (January 2020 – June 2020)
- Graduate Research Advisor: Tyler Wilcox (September 2019 – June 2020)
- Undergraduate Research Advisor: Lucas Lindberg (July 2019 – June 2020)
- Undergraduate Research Advisor: Tyler Wilcox (December 2019 – June 2019)

- Undergraduate Research Advisor: Carson Valente (June 2018 - Present)
- Undergraduate Research Advisor: Andres Yepez (Oct. 2017 – June 2018)
- Undergraduate Research Advisor: Colin Kolbus (Sept. 2017 - Present)
- Master's Supervisory Committee Member: Alexander Baird (March 2019)
- Doctoral Qualifying Exam Committee Member: Andrew Makdisi (December 2019)
- Doctoral Qualifying Exam Committee Member: William Pollock (November 2017)

RESEARCH ACTIVITIES

Funded Research

Funding Agency	***Title***	**Your role with other PI's and co-PI's**	**Total Amount, Your Amount, (Subcontracts if any, University Matching if any)**	**Dates (start - finish)**
NSF (ECI Program)	*CAREER: Mollusk and Arthropod-inspired Bio-cemented Composites for Sustainable, Resilient, and Multifunctional Ground Improvement*	PI	Total amount $500,00	9/21 to 8/26
NSF (ECI Program)	*REU Supplemental: Investigating the Life Cycle Performance of Bio-cementation Soil Improvement: Synthesis, Degradation, and Repair*	PI	Total amount $8,000	6/2020 to 6/2021
Geotechnical Women Faculty (GTWF) Seed Funding / National Science Foundation	*Collaboration for Geotechnical Lab Testing, Earthquake Engineering, and Bio-geotechnics*	Co-PI (PI, Dr. Diane Moug, PSU, Co-PI Dr. Katerina Ziotopoulou, UC Davis)	Total amount $6,000 ($1,162 Allocated to UW travel)	1/2020 to 1/2021

NSF CBBG (ERC Program)	*Up-scaling of Stimulated Ureolytic Bio-cementation*	Co-PI (PI, Dr. Jason DeJong)	$179,902 Allocated to UW	7/2017 to 7/2020
NSF (ECI Program)	*Investigating the Life Cycle Performance of Bio-cementation Soil Improvement: Synthesis, Degradation, and Repair*	PI	Total amount $425,000	3/2019 to 3/2021
UW RRF	*Investigating the Liquefaction Resistance of Bio-cemented Sands During Earthquake-Induced Cyclic Loading*	PI	Total amount $39,888	3/2018 to 3/2019

Other Awards

Funding Agency	**Purpose**	**Total Amount, Your Amount, (Subcontracts if any, University Matching if any)**	**Date**
UW STF	*Earthquake Ground-Motion Prediction via Field and Laboratory Measurement of Seismic-Wave Velocities (Equipment only)*	Total amount $76,553 Co-PI (PI, Dr. Brett Maurer)	3/2019
NSF (NHERI)	*Travel support to attend NHERI Science Workshop in Washington D.C. for Natural Hazards IDEA Presentation*	Total amount $1,000	3/2019

SERVICE

Departmental Service

- Undergraduate Education Committee Member (Sept. 2020 – Present)
- Valle Scholarship & Scandinavian Exchange Program Committee Member (Sept. 2019 – Present)
- Justice, Equity, Diversity, and Inclusion Committee Member (Sept. 2018 – Sept. 2020)
- Search Committee Member for UW CEE Technician (Oct. 2019 to Dec. 2019)
- Presenter for CEE Undergraduate Advising Welcome and Orientation (Sept. 2019)
- Undergraduate Admissions Committee Member (July 2018)

- Departmental Affairs Committee Member (2017 – 2018)
- Search Committee Member for UW CEE Faculty (Dec. 2017 to Mar. 2018)
- Presenter for CEE Undergraduate Advising Welcome and Orientation (Sept. 2017)

Professional society and other service

- Editorial Board Member for *Canadian Geotechnical Journal* (January 2020 - Present)
- Scientific Committee Member for First International Conference on Microbial Biotechnology in Construction Materials and Geotechnical Engineering (MBCMG2020) (November 2020)
- Co-organizer of "Biogeotechnics Symposium" Technical Session for GeoCongress 2020 (March 2020)
- Co-chair of the "Biopolymers" Technical Session for GeoCongress 2019 (March 2019)
- Member of Organizing Committee for First International Research Symposium on Bio-Mediated & Bio-Inspired Geotechnics (B2G), Atlanta, GA (Sept. 2018)
- Co-organizer of the "Applications of Biochemical Modification of Porous Media" mini-symposium for International Society for Porous Media (Interpore) 10th Annual Conference (May 2018)
- Member of American Society of Civil Engineers (ASCE) Geo-Institute "Soil Properties and Modelling" Technical Committee (2017 to Present)

International, national, or governmental service

- Reviewer for Deutsche Forschungsgemeinschaft
- Reviewer for FONDECYT-CHILE
- Reviewer for U.S. National Science Foundation (NSF)

All other service

- Participant in the 2019 International Geosynthetic Society Educate the Educators Workshop (at UC San Diego)
- Washington State Academic Red Shirt Program (STARS) Faculty Mentor (Jan. 2019 – Present)
- UW Engineering Discovery Days Exhibit Organizer (April 2018 – Present)
- Faculty Mentor to a Mary Gates Research Scholarship Recipient (Colin Kolbus, Undergraduate Researcher) ($5,000 total)