NATHAN YEE
Department of Environmental Sciences
Department of Earth and Planetary Sciences
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I. Academic Degrees

B.Sc.	1997	Earth and Planetary Sciences	McGill University
Ph.D.	2001	Geological Sciences	University of Notre Dame

II. Appointments

2016 – present	Professor, Rutgers-New Brunswick Department of Environmental Sciences Department of Earth and Planetary Sciences
2010 – 2016	Associate Professor, Rutgers-New Brunswick Department of Environmental Sciences Department of Earth and Planetary Sciences
2006 – 2010	Assistant Professor, Rutgers-New Brunswick Department of Environmental Sciences Department of Earth and Planetary Sciences
2004 – 2006	Assistant Professor, Rutgers-Newark Department of Earth and Environmental Sciences
2002 – 2003	Visiting Scholar, University of Toronto Deparment of Geology
2001 – 2003	Postdoctoral Research Fellow, University of Leeds School of Earth Sciences
1999	Visiting Scientist, Sandia National Laboratories Geochemistry Department

III. Awards

2010 Rutgers Board of Trustees Research Fellowship for Scholarly Excellence
2010 Academic Excellence Award for Excellence in Teaching, Rutgers University
2009 Houtermans Medal, European Society for Geochemistry

IV. Publications

1. Walzack A.B., Yee N., Young L.Y. (2017) Genome sequence of the autotrophic arsenite-oxidizing bacterium *Bosea sp*. strain WAO (submitted)
2. Mishra B., Shoenfelt E., Yu Q., Yee N., Fein J.B., Myneni S.C.B (2017) Stoichiometry of mercury-thiol complexes on bacterial cell envelopes, *Chemical Geology* http://dx.doi.org/10.1016/j.chemgeo.2017.02.015
3. Ha J., Zhao X., Yu R., Barkay T., Yee N. (2017) Hg(II) Reduction by Siderite ($FeCO_3$), *Applied Geochemistry*, 78, 211–218
4. Wang Y., Schaefer J.K., Mishra B., Yee N. (2016) Intracellular Hg(0) oxidation in *Desulfovibrio desulfuricans* ND132, *Environmental Science & Technology*, DOI: 10.1021/acs.est.6b03299
5. Harel A., Häggblom M.H., Falkowski P.G., Yee N. (2016) Evolution of prokaryotic respiratory molybdoenzymes with high frequency of genomic co-occurrence, *FEMS Microbiology Ecology*, DOI: 10.1093/femsec/fiw187

6. Choi J.K., Shah M., Yee N. (2016) *Anaerosporomusa subterraneum* gen. nov., sp. nov., a spore-forming obligate anaerobe isolated from saprolite, *International Journal of Systematic and Evolutionary Microbiology*, DOI 10.1099/ijsem.0.001275
7. Louie T.S., Giovannelli D., Yee N., Narasingarao P., Starovoytov V., Bini E., Häggblom M.M. (2016) High-quality draft genome sequence of *Sedimenticola selenatireducens* strain AK4OH1^{T}, a gammaproteobacterium isolated from estuarine sediment, *Standards in Genomic Sciences*, DOI: 10.1186/s40793-016-0191-5
8. Walzack A.B., Kafantaris F.C., Druschel G. K., Yee N., Young L.Y. (2016) Transformation of galena to pyromorphite produces bioavailable sulfur for neutrophilic chemoautotrophy, *Geobiology*, DOI:10.1111/gbi.12199
9. Colombo M.J., Ha J., Reinfelder J.R., Barkay T., Yee N., (2014) Oxidation of Hg(0) to Hg(II) by Diverse Anaerobic Bacteria, *Chemical Geology*, 363, 334-340
10. Theisen J. and Yee N. (2014) The Molecular Basis for Selenate Reduction in *Citrobacter freundii*, *Geomicrobiology Journal*, 31, 875-884
11. Cheng S., Karkar S., Bapteste D, Yee N., Falkowski P, Bhattacharya D. (2014) Sequence similarity network reveals the imprints of major diversification events in the evolution of microbial life, *Frontiers in Ecology and Evolution* 2, 72, doi: 10.3389/fevo.2014.00074
12. Yee N., Choi J., Porter A.W., Carey S., Rauschenbach I., Harel A. (2014) Selenate reductase activity in *Escherichia coli* requires Isc iron-sulfur cluster biosynthesis genes. *FEMS Microbiology Letters*, 361, 138-143
13. Shah M., Lin C.C., Kukkadapu R., Engelhard M.H., Zhao X., Wang Y., Barkay T., Yee N. (2014) Syntrophic Effects in a Subsurface Clostridia Consortium on Fe(III)-(Oxyhydr)oxide Reduction and Secondary Mineralization, *Geomicrobiology Journal*, 31, 101-115
14. Mumford A.C., Yee N., Young L.Y. (2013) Precipitation of Alacranite (As_8S_9) by a Novel As(V)-Respiring Anaerobe Strain MPA-C3, *Environmental Microbiology*, 15, 2748-2760
15. Kim J. D., Yee N., Nanda V., Falkowski P.G. (2013) Anoxic Photochemical Oxidation of Siderite Generates Molecular Hydrogen and Iron Oxides, *Proceedings of the National Academy of Sciences*, 110, 10073-10077
16. Colombo M.J., Ha J., Reinfelder J.R., Barkay T., Yee N., (2013) Anaerobic Oxidation of Hg(0) and Methylmercury Formation by *Desulfovibrio desulfuricans* ND132, *Geochimica et Cosmochimica Acta* , 112, 166-177
17. Theisen J., Zyltra G., Yee N. (2013) Genetic Evidence for a Molybdopterin-Containing Tellurate Reductase, *Applied and Environmental Microbiology*, 79, 3171-3175
18. Wang Y., Wiatrowski H.A., Ria J., Lin C.C., Young L.Y., Kerkhof L.J., Yee N., Barkay T. (2012) Impact of mercury on denitrification and denitrifying microbial communities in nitrate contaminated subsurface sediments, *Biodegradation*, 24, 33-46
19. Rauschenbach I., Bini E., Häggblom M.M., Yee N. (2012) Physiological response of *Desulfurispirillum indicum* S5 to arsenate and nitrate as terminal electron acceptors, *FEMS Microbiology Ecology*, 81, 156-162
20. Cuebas M., Villafane A., McBride M., Yee N., Bini E. (2011) Arsenate reduction and expression of multiple chromosomal *ars* operons in *Geobacillus kaustophilus, Microbiology*, 157, 2004-2011
21. Rauschenbach I., Yee N., Häggblom M.M., Bini E. (2011) Energy Metabolism and Multiple Respiratory Pathways Revealed by Genome Sequencing of *Desulfurispirillum indicum* strain S5, *Environmental Microbiology*, 13, 1611-1621
22. Lin C.C., Yee N., Barkay T. "Microbial transformations in the mercury cycle", In *Environmental Chemistry and Toxicology of Mercury*. Ed. G. Liu, Y. Cai, and N. O'Driscoll, Hoboken: John Wiley & Sons, 2011
23. Slater L.,Day-Lewis F., Ntarlagiannis D., O'Brien M., Yee N. (2009) Geoelectrical measurement and modeling of biogeochemical breakthrough behavior during microbial activity, *Geophysical Research Letters*, 36, L14402, doi:10.1029/2009GL038695

24. Wiatrowski H.A., Das S., Kukkadapu K., Ilton E., Barkay T., Yee N. (2009) Reduction of Hg(II) to Hg(0) by magnetite, *Environmental Science & Technology*, 43, 5307–5313
25. Ma J., Kobayashi D.Y. Yee N. (2009) Role of menaquinone biosynthesis genes in selenate reduction by *Enterobacter cloacae* SLD1a-1 and *Escherichia coli* K12, *Environmental Microbiology*, 11, 149-158
26. Boonfueng T. Axe L., Yee N., Hahn D. Ndiba P.K. (2009) Zn sorption mechanisms onto sheathed *Leptothrix discophora* and the impact of nanoparticulate biogenic Mn oxide coating, *Journal of Colloid and Interface Science*, 333, 439-447
27. Yee N. and Kobayashi D.Y. (2008) Molecular genetics of selenate reduction by *Enterobacter cloacae* SLD1a-1, *Advances in Applied Microbiology*, 64, 107-123
28. Zhu W., Young L.Y., Yee N., Serfes M., Rhine E.D., Reinfelder J.R. (2008) Sulfide driven arsenic mobilization from arsenopyrite and black shale pyrite, *Geochimica et Cosmochimica Acta* 72, 5243-5250
29. Personna Y., Ntarlagiannis D., Slater L., Yee N., O'Brien M., Hubbard S. (2008) Spectral Induced Polarization and Electrodic Potential Monitoring of Microbially-Mediated Iron Sulfide Transformations, *Journal of Geophysical Research*, 113, G02020, doi:10.1029/2007JG000614
30. Slater L., Ntarlagiannis D., Yee N., O'Brien M., Zhang C., Williams K.H., (2008) Electrodic voltages in the presence of dissolved sulfide: Implications for monitoring natural microbial activity, *Geophysics*, 73, F65-F70
31. Ma J., Kobayashi D.Y. Yee N. (2007) Chemical kinetic and molecular genetic study of selenium oxyanion reduction by *Enterobacter cloacae* SLD1a-1, *Environmental Science & Technology*, 41, 7795-7801
32. Yee N., Ma J., Dalia A., Boonfueng T., Kobayashi D.Y. (2007) Se(VI) reduction and the precipitation of Se(0) precipitation by the facultative bacterium *Enterobacter cloacae* SLD1a-1 is regulated by FNR, *Applied and Environmental Microbiology*, 73, 1914-1920
33. Kenward P.A., Fowle D.A., Yee N. (2006) Microbial selenate sorption and reduction in nutrient limited systems, *Environmental Science & Technology*, 40, 3782-3786
34. Xu Y., Axe L., Yee N., Dyer J.A. (2006) Bidentate Complexation Modeling of Heavy Metal Adsorption and Competition on Goethite, *Environmental Science & Technology*, 40, 2213-2218
35. Yee N., Shaw S., Benning L.G., and Nguyen T.H. (2006) The rate of ferrihydrite transformation to goethite via the Fe(II) pathway, *American Mineralogist*, 91, 92-96
36. Ntarlagiannis D. Slater L.D., Yee N. (2005) On the low-frequency electrical polarization of bacterial cells in sands, *Geophysical Research Letters*, 32, L24402, doi:10.1029/2005GL024751
37. Fein, J.B, Boily J.F, Yee N., Gorman-Lewis D., and Turner B.F. (2005) Modeling the speciation of bacterial surface ligands: Comparison of discrete and continuous pKa approaches *Geochimica et Cosmochimica Acta*, 69, 1123-1132
38. Yee, N. and Fowle D.A. Ferris F.G. (2004) A Donnan Model for metal sorption onto *Bacillus subtilis*, *Geochimica et Cosmochimica Acta*, 68, 3657-3664
39. Yee, N., Benning L.G., Phoenix V.R., and Ferris F.G. (2004) Characterization of metal-cyanobacteria sorption reactions: A combined macroscopic and infrared spectroscopic investigation, *Environmental Science & Technology*, 38, 775-782
40. Benning L.G., Phoenix V.R. Yee N., and Konhauser K.O. (2004) Molecular characterization of cyanobacterial silicification using synchrotron infrared micro-spectroscopy, *Geochimica et Cosmochimica Acta*, 68, 729-741
41. Benning L.G., Phoenix V.R. Yee N., and Tobin, M. (2004) The dynamics of cyanobacterial silicification: an infrared micro-spectroscopic investigation, *Geochimica et Cosmochimica Acta*, 68, 743-757
42. Yee, N., Phoenix, V.R., Konhauser, K.O., Benning L.G. and F.G. Ferris (2003) The effect of bacteria on silica precipitation at neutral pH: Implications for bacterial silicification in geothermal hot springs, *Chemical Geology*, 199, 83-90.

43. Yee, N. and Fein, J.B. (2003) Quantifying metal adsorption onto bacteria mixtures: A test and application of the surface complexation model, *Geomicrobiology Journal*, 20, 43-60
44. Kelly, S.D., Kemner, K.M., Fein, J.B., Fowle, D.A., Boyanov, M.I., Bunker, B.A., and Yee, N., (2002) X-ray absorption fine structure determination of pH-dependent U-bacterial cell wall interactions. *Geochimica et Cosmochimica Acta*, 66, 3855-3871
45. Yee, N. and Fein, J.B. (2002) Does metal adsorption onto bacteria inhibit or enhance metal transport?--Column and batch reactor experiments on Cd-*Bacillus subtilis*-quartz systems, *Chemical Geology*, 185, 303-319
46. Yee, N. and Fein, J.B. (2001) Cd adsorption onto bacterial surfaces: A universal adsorption edge?, *Geochimica et Cosmochimica Acta*, 65, 2037-2042
47. Kelly, S.D., Boyanov, M.I., Bunker, B.A., Fein, J.B., Fowle, D.A., Yee, N. Kemner, K.M., (2001) XAFS determination of the bacterial cell wall functional groups responsible for complexation of Cd and U as a function of pH U-bacterial cell wall interactions at low pH. *Journal of Synchrotron Radiation*, 8, 946-948
48. Yee, N., Fein, J.B. and Daughney, C.J. (2000) Experimental study of the pH, ionic strength, and reversibility behavior of bacteria adsorption onto mineral surfaces, *Geochimica et Cosmochimica Acta*, 64, 609-617
49. Daughney, C.J., Fein, J.B. and Yee N. (1998) A comparison of the thermodynamics of metal adsorption onto two common bacteria, *Chemical Geology*, 144, 161-176
50. Fein, J.B., Daughney, C.J., Yee, N. and Davis, T.A. (1997) A chemical equilibrium model for metal adsorption onto bacterial surfaces, *Geochimica et Cosmochimica Acta*, 61, 3319-3328

V. Research Grants

Current

1. Title of Project:	Collaborative Research: Selenium redox reactions and isotope ratios: The role of microbial and abiotic Se oxidation
Funding Agency:	NSF – Geobiology and Low Temperature Geochemistry
Period of the Award:	9/1/15-8/31/18
Amount Awarded:	$75,950
Role:	Principal Investigator
2. Title of Project:	The Chemical Transformation of Minerals by Light and the Evolution of Prebiotic Metabolism
Funding Agency:	NASA Exobiology
Period of the Award:	03/15/16-03/14/19
Amount Requested:	$835,935
Role:	Co-Principal Investigator (PI: P. Falkowski)

Completed

1. Title of Project:	Microbial Oxidation of Hg(0): Its Effect on Hg Stable Isotope Fractionation and Methylmercury Production
Funding Agency:	Department of Energy –SBR
Period of the Award:	9/1/11-2/28/16
Amount Awarded:	$1,099,555
Role:	Principal Investigator
2. Title of Project:	Evolutionary map of life's electronic circuits
Funding Agency:	Gordon and Betty Moore Foundation

Period of the Award:	4/15/11-4/14/15
Amount Awarded:	$1,075,000
Role:	Co-Principal Investigator (PI: P. Falkowski)

3. Title of Project:	Molecular studies of dissimilatory selenium reduction by subsurface microorganisms
Funding Agency:	NSF – Geobiology and Low Temperature Geochemistry
Period of the Award:	7/1/09-6/30/13
Amount Awarded:	$399,544
Role:	Principal Investigator

4. Title of Project:	Prebiotic evolution of redox chemistry on Earth
Funding Agency:	NSF – Molecular and Cellular Biosciences
Period of the Award:	07/2009-07/2011
Amount Awarded:	$299,987
Role:	Co-Principal Investigator (PI: P. Falkowski)

5. Title of Project:	Reduction of mercury in saturated subsurface sediments and its potential to mobilize mecury in its elemental form
Funding Agency:	Department of Energy – ERSP
Period of the Award:	1/1/08-12/31/10
Amount Awarded:	$996,810
Role:	Co-Principal Investigator (PI: T. Barkay)

6. Title of Project:	The kinetics and mechanisms of selenium reduction by soil microorganims
Funding Agency:	USDA-NRI: Soil Processes
Period of the Award:	9/1/05-8/31/08
Amount Awarded:	$246,916
Role:	Principal Investigator (sole PI)

7. Title of Project:	The biogeochemsitry of Pb transformations mediated by phosphate-releasing bacteria
Funding Agency:	NJWRRI
Period of the Award:	7/1/07-6/30/08
Amount Awarded:	$30,000
Role:	Principal Investigator (sole PI)

8. Title of Project:	The mechanisms of microbial selenium methylation
Funding Agency:	Rutgers University Research Council
Period of the Award:	7/1/07-5/1/08
Amount Awarded:	$1,000
Role:	Principal Investigator (sole PI)

9. Title of Project:	Rutgers-Newark Biogeoscience Research Initiative
Funding Agency:	Academic Excellence Fund
Period of the Award:	January 2004
Amount Awarded:	$60,000
Role:	Co-Principal Investigator (PI: Lee Slater)

VI. Invited Addresses

2017: University of Notre Dame, CEEES, November 2006
2016: University of Connecticut, Department of Civil and Environmental Engineering, February 2016
2016: Temple University, Department of Earth and Environmental Sciences, February 2016
2016: Rutgers-Newark, Department of Earth and Environmental Sciences, February 2016
2015: McMaster University, Origins Lecture Series, March 2015
2014: Princeton University, EGGS Lecture Series, May 2014
2012: MIT, Chemical Oceanography and Biogeochemistry Seminar, February 2012
2012: Harvard University, Environmental Sciences and Engineering, January 2012
2011: Chinese American Academic & Professional Society (CAAPS), Flushing NY, 2011
2011: Goldschmidt Conference, Prague Czech Republic, 2011
2011: Symposium of the Geochemistry of the Earth Surface 9, Boulder, 2011
2010: American Geophysical Union Fall Meeting, San Francisco, 2010
2010: Goldschmidt Conference, Knoxville TN, 2010
2010: University of Illinois Urbana Champaign, Department of Geology, April 2010
2010: Geological Society of America, Baltimore, March 2010
2009: University of Delaware, Department of Geological Sciences, November 2009
2009: Goldschmidt Conference, Davos Switzerland, June 2009
2008: SUNY Stony Brook, Department of Geosciences, November 2008
2008: Chinese Academy of Sciences, Gaungzhou Institute of Geochemistry, May 2008
2008: Southern China University of Technology, May 2008
2008: Chinese Academy of Geological Sciences, Institute of Geology, May 2008
2008: NJIT, Department of Chemistry and Environmental Science Seminar Series, February 2008
2006: University of Notre Dame, CEEES, November 2006
2006: MIT, Biogeochemistry Seminar Series, February 2006
2005: NJIT, Department of Civil and Environmental Engineering Seminar Series, November 2005
2005: American Geophysical Union Spring Meeting, New Orleans, May 2005
2005: Goldschmidt Conference, Moscow Idaho, May 2005
2005: Kansas University, Department of Geology, May 2005
2003: Arizona State University, Dept. of Geological Sciences Seminar Series, May 2003
2003: University of Toronto, Dept. of Geology, Rockfest Seminar Series, January 2003
2002: University of Windsor, Great Lakes Institute for Environmental Research, October 2002
2002: University of Saskatchewan, Depart. of Saskatchewan Seminar Series, February 2002
2001: University of Leeds, School of Earth Sciences Seminar Series, October 2001
2001: Princeton University, Department of Geosciences, March 2001
2000: Lamont-Doherty Earth Observatory of Columbia University, December 2000

VII. Conference Presentations

Yee N., Wang Y., Wang T., Schaefer J., Mishra B. Intracellular Mercury Oxidation and Complexation in Anaerobic Bacteria, Geological Society of America Annual Meeting, Baltimore, Maryland, NOVEMBER 2015.

Yee N., Choi J., Shah M. Iron oxide reduction by a novel subsurface fermentative bacterium, Geological Society of America Annual Meeting, Vancouver, Canada OCTOBER 2014

Theisen J., Yee N., Bacterial Tellurate Reduction is Catalyzed by a Molybdenum-Containing Enzyme, Goldschmidt Conference, Sacramento, JUNE 2014

Yee N., Choi J., Porter A.W., Carey S., Rauschenbach I. Iron and Molybdenum Metabolism in Se(VI)-Respiring Bacteria, Goldschmidt Conference, Sacramento, JUNE 2014

Colombo M., Yee N., Role of Microbial Growth on Hg(0) Uptake and Production of Methylmercury, Goldschmidt Conference, Sacramento, JUNE 2014

Yee N., Colombo M., Ha J., Interactions of Elemental Mercury with Microbial Biomass Goldschmidt Conference, Sacramento, JUNE 2014

Theisen J., Yee N., The Molecular Basis for Selenate Reduction in Citrobacter freundii, Goldschmidt Conference, Sacramento, JUNE 2014

Colombo M.,Ha J., Reinfelder J.R., Barkay T., Yee N., Oxidation of Hg(0) to Hg(II) by Anaerobic Bacteria, International Conference on Mercury as a Global Pollutant (ICMGP), Edinburgh, AUG 2013

Häggblom M.M., Bini E., Yee N., Anaerobic respiration of selenium and arsenic oxyanions, The 9th International Symposium on Persistent Toxic Substances (ISPTS), Miami, OCT 2012

Ha J, Colombo M., Reinfelder J.R., Barkay T., Yee N., Studying Biotic and Abiotic Redox Transformation of Mercury using XANES, American Chemical Society National Meeting, Philadelphia, AUG 2012

Walczak A.B., Yee N., Young LY, Phosphate reaction with PbS stimulates microbial S oxidation, Goldschmidt Conference, Montreal, JUNE 2012

Parikh M., Barkay T., Yee N., Role of Syntrophy in the Microbial Reduction of Crystalline Iron Oxides, Goldschmidt Conference, Montreal, JUNE 2012

Yee N., Rauschenbach I, Bini E, Häggblom M.M., Genome-enabled study of alternate respiratory pathways in a novel As(V)-respiring bacterium, Goldschmidt Conference, Montreal, JUNE 2012

Colombo M.,Ha J., Reinfelder J.R., Barkay T., Yee N., Microbial production of methylmercurcury from Hg(0), Goldschmidt Conference, Montreal, JUNE 2012

Yee N., and Parikh M., Transformation of crystalline iron oxides to nanoparticulate FeS during microbial fermentation of organic matter, American Chemical Society National Meeting, San Diego, MAR 2012

Walczak A.B., Yee N., Young LY, Bosea sp. str. WAO Oxidizes Lead Sulfide at Neutral pH, Gordon Research Conferences: Applied & Environmental Microbiology, South Hadley, JULY 2012

Mumford A., Yee N., Young L.Y., Alacranite (As_8S_9) Precipitation by a Novel Anaerobic Arsenate Reducing Microorganism, Gordon Research Conferences: Applied & Environmental Microbiology, South Hadley, JULY 2012

Parikh M., Lin C. Barkay T., Yee N., Iron Reduction by a Clostridia Consortium, Goldschmidt Conference, Prague, AUG 2011

Colombo M.,Ha J., Reinfelder J.R., Barkay T., Yee N., Microbial Uptake and Methylation of Dissolved Elemental Mercury, Goldschmidt Conference, Prague, AUG 2011

Parikh M., Lin C., Wang Y., Dohnalkova A., Kukkadapu R., Bowden M., Barkay T., Yee N., Novel Iron-Reducing Bacterium Isolated from Oak Ridge TN., Goldschmidt Conference, Knoxville, JUNE 2010

Walczak A.B., Yee N., Young LY, Bosea sp. WAO Oxidizes Metal Sulfides at Neutral pH, Goldschmidt Conference, Knoxville, JUNE 2010

Lin C. Wang Y.,Wiatrowski H., Yee N., Barkay T. Reduction of Hg(II) to Hg(0) by Nitrate Enrichment Cultures Established by Subsurface Sediments, Goldschmidt Conference, Knoxville, JUNE 2010

Rauschenbach I., Yee N., Bini E., Häggblom M.M., New insights into anaerobic respiration from the genome of the selenate-respiring bacterium "Desulfurispirillum indicum" strain S5, Goldschmidt Conference, Knoxville, JUNE 2010

Mumford A., Yee N., Meng L. Gu J., Young L.Y. Isolation and Characterization of a Novel Anaerobe Capable of Respiratory Arsenate Reduction and Mineral Precipitation, Abstract Q-031, Philadelphia, MAY 2009

Yee N., Ma J., Kobayashi D.Y., Regulation and Transport of the Selenate Reductase in Enterobacter cloacae SLD1a-1. American Society for Microbiology, Abstract Q-044, Boston, JUNE 2008

Ma J., Kobayashi D.Y., Yee N., The Role of Menaquinone in Se(VI) Reduction by Enterobacter cloacae SLD1a-1. American Society for Microbiology, Abstract Q-043, Boston, JUNE 2008

Ma J., Kobayashi D.Y., Yee N., The kinetics of Se(VI) and Se(IV) reduction by Enterobacter cloacae, American Society for Microbiology, Abstract Q-049, Toronto, MAY 2007

Cuiule C., Kobayashi D.Y., Yee N., Se(VI) Reduction by Enterobacter cloacae SLD1a-1 Requires Anaerobic Electron Carriers, American Society for Microbiology, Abstract Q-050, Toronto, MAY 2007

Yee N., Kobayashi D.Y., Genetic Identification of an Enzymatic Se(VI) Reduction Pathway, American Geophysical Union, Abstract B11A-0998, San Francisco, DEC 2006

Yee N., Dalia A., Kobayashi D.Y., Ma J, Boonfueng T., Heterologous expression of the fnr gene from Enterobacter cloacae SLD1-1a in Escherichia coli S17-1 activates selenate reductase activity and the ability to precipitate Se(0) Soil Science Society of America, Indianapolis, Abstract 178-17, NOV 2006

Yee N., Dalia A., Kobayashi D.Y., Ma J., The Genetics of Microbial Se(0) Biomineral Formation, American Society for Microbiology, Abstract Q-156, Orlando, JUN 2006

O'Brien M., Ntarlagiannis D., Slater L., Yee N., Geophysical Detection of Biomineralization Within Selenium, AGU Joint Assembly, Abstract NS41A-05 Baltimore, MAY 2006

Xu Y, Axe L, Yee N, Dyer JA, Surface complexation modeling of heavy metal adsorption and competition on goethite. Abstracts of Papers of the American Chemical Society 231: 18-GEOC MAR 2006

Boonfueng T, Axe L, Yee N, Zn(II) sorption mechanisms on biogenic Mn oxide sheathed Leptothrix discophora SP-6. Abstracts of Papers of the American Chemical Society 231: -96-GEOC MAR 2006

Ntarlagiannis D., Yee N., Slater L., Atekwana, E., Electrical Measurements on Microbial Cells in Suspension and in Sand Columns, AGU Joint Assembly, Abstract NS51B-06 New Orleans, MAY 2005

Yee, N., The microbial cell surface electric field: life in an ion cloud AGU Joint Assembly, Abstract NS44A-04, New Orleans, MAY 2005

Benning LG, Phoenix V, Yee N, Bacterial-silica interactions: Affinity or fate? Abstracts of Papers of the American Chemical Society 226: U590-U590 056-GEOC Part 1 SEP 2003

Yee N, Benning LG, A synchrotoron infrared spectroscopic study of metal-water interactions. 16th International Symposium on Environmental Biogeochemistry, SEP 2003

Yee N, Phoenix VR, Konhauser KO, Benning LG, The Effect of Bacterial Surfaces on Silica Precipitation, American Geophysical Union, Abstract B22A-0126, San Francisco DEC 2001

Kelly SD, Kemner KM, Fein JB, Fowle DA, Boyanov MI, Bunker BA, Yee N XAFS investigations of interactions of U(VI) with Bacillus subtilis, green rust, and bio-oxidizing Dechlorosoma suillum. Abstracts of Papers of the American Chemical Society 222: 2-ENVR Part 1 AUG 2001

Yee N, and Fein JB, Quantifying metal adsorption onto bacteria constortia: A test of the surface complexation model, Goldschimdt Conference, Hot Springs, MAY 2001

Yee N, Fein JB, Quantifying adsorption reactions in ternary metal-bacteria-mineral systems: Batch reactor and column transport experiments, Geological Society of America, Abs. No. 52411, Reno NOV 2000

Yee N, Fein JB, Cd adsorption onto bacterial surfaces: A universal adsorption edge? Goldschmidt Conference, Oxford SEP 2000

Westrich H.R, Anderson H.L., Arthur S.E., Brady P. V., Cygan R. T., Liang J. J., Zhang P. C. and Yee N, Prediction of Metal Sorption in Soils, U.S. Department of Energy Low-Level Radioactive Waste Management Conference, Tucson, MAR 2000

Yee N, Brady PV, A surface complexation model for Sr sorption/desorption onto quartz, goethite and smectite mixtures, Geological Society of America, Abs. No. 52012 Denver OCT 1999

Fein JB, Daughney CJ, Fowle DA, Wightman PG, and Yee N, Quantifying bacteria-water-rock adsorption reactions using a surface complexation approach. 14th International Symposium on Environmental Biogeochemistry, Deerhurst Resort, Canada, SEPT 1999

Yee N, Fein JB, Experimental study of the pH-, ionic strength-, and reversibility behavior of bacteria-mineral adsorption, Geological Society of America Annual Conference, Abstract 50393, Toronto OCT 1998

Fein JB, Daughney CJ, Yee N, Using thermodynamics to quantify the effects of bacteria on metal transport in fluid-rock systems, American Geophysical Union, Abstract H31E-08 Washington, DC, DEC 1996

Fein J.B, Boily JF, Daughney CJ, Davis TA,Wightman PG, Yane L, Yee N, The thermodynamics of metal adsorption onto bacterial surfaces, Geological Society of America, Boulder, OCT 1996

Daughney, C.J., Fein, J.B., Yee, N.A comparison of the thermodynamics of metal adsorption onto two gram-positive bacteria, Geological Society of America, Boulder, OCT 1996

VIII. Teaching

Fall 2016	Water Chemistry, 3 credits (11:375:444); cross-listed with Environmental Geochemistry (01:460:417) and Aquatic Chemistry (16:375:517)
Spring 2016	Byrne Seminar: Life on Mars, 1 credit (11:090:101)
Fall 2015	Water Chemistry, 3 credits (11:375:444); cross-listed with Environmental Geochemistry (01:460:417) and Aquatic Chemistry (16:375:517)
Spring 2015	Byrne Seminar: Life on Mars, 1 credit (11:090:101)
Fall 2014	Water Chemistry, 3 credits (11:375:444); cross-listed with Environmental Geochemistry (01:460:417) and Aquatic Chemistry (16:375:517)
Spring 2014	Advanced Special Problems in Environmental Sciences, 1 credit (16:375:626); cross-listed with Advanced Studies in Geology, 3 credits (16:460:601)
Fall 2013	Water Chemistry, 3 credits (11:375:444); cross-listed with Environmental Geochemistry (01:460:417) and Aquatic Chemistry (16:375:517)
Spring 2013	Geomicrobiology Seminar, 1 credit (16:460:628)
Fall 2012	Water Chemistry, 3 credits (11:375:444); cross-listed with Environmental Geochemistry (01:460:417)
Spring 2012	Geomicrobiology, 3 credits (16:375:563)
Fall 2010	Water Chemistry, 3 credits (11:375:444); cross-listed with Environmental Geochemistry (01:460:417)
Spring 2010	Environmental Geology, 3 credits (01:460:202:02)
Fall 2009	Water Chemistry, 3 credits (11:375:444); cross-listed with Environmental Geochemistry (01:460:417)
Spring 2009	Environmental Geology, 3 credits (01:460:202:02)
Fall 2008	Water Chemistry, 3 credits (11:375:444); cross-listed with Environmental Geochemistry (01:460:417)

Spring 2008 Environmental Geology, 3 credits (01:460:202:02)

Fall 2007 Geomicrobiology, 3 credits (16:375:563) *Newly Developed Course*

Fall 2006 Mineralogy, 4 credits (21:460:321)

Spring 2006 Environmental Geology, 3 credits (21:460:206)
Bioremediation, 3 credits (26:375:540)

Fall 2006 Mineralogy, 4 credits (21:460:321)

Spring 2006 Aqueous Geochemistry, 3 credits (21:460:416)
Environmental Geology Lab, 1 credit (21:460:207)

Fall 2005 Mineralogy, 4 credits (21:460:321)

Doctoral Students: Primary Advisor

1. Jennifer Goff, Ph.D. Student
   Microbial Biology Graduate Program (Rutgers-NB)
   Title of Project: Isolation and Genetic Characterization of Tellurate Respiring Bacteria
   Expected Graduation 2019
2. Lee Terry, Ph.D. Student
   Geological Sciences Graduate Program (Rutgers-NB)
   Title of Project: Antimonate and Arsenate Biomineralization by Chemolithotrophic Bacteria
   Expected Graduation 2019
3. Yuwei (Cindy) Wang, Ph.D. Student (Rutgers-NB)
   Environmental Sciences Graduate Program (Rutgers-NB)
   Title of Project: Microbial Oxidative Procesess: Impact on Hg and Se Geochemistry
   Expected Graduation 2019
4. Jessica Choi, Ph.D. Candidate
   Microbial Biology Graduate Program (Rutgers-NB)
   Title of Project: Experimental Studies on fermentative Firmicutes from anoxic environments
   Expected Graduation 2017
5. Matthew Colombo, Ph.D.
   Environmental Sciences Graduate Program (Rutgers-NB)
   Title of Project: Experimental Studies of Mercury Oxidation by Anaerobic Bacteria
   Graduated October 2013
6. Madhavi Shah, Ph.D.
   Microbial Biology Graduate Program (Rutgers-NB)
   Title of Project: Iron Oxide Reduction by a Clostridia Consortium: Insights from Physiological and Genome Analyses
   Graduated May 2013
7. Jincai Ma, Ph.D.
   Environmental Sciences Joint Program (Rutgers-Newark/NJIT)
   Title of Project: Mechanisms of microbial selenium oxyanion reduction
   Graduated May 2008

Doctoral Students: Co-Advisor

1. Alexandra Walczak, Ph.D. Student (2015)
   Molecular Bioscience Graduate Program (Rutgers- NB)

Title of Ph.D. Project: Sulfide mineral oxidation by chemolithotrophic prokaryotes

2. Adam Mumford, Ph.D. (2012)
   Environmental Sciences Graduate Program (Rutgers- NB)
   Title of Ph.D. Dissertation: Microbial Reduction, Precipitation, and Mobilization of Arsenic
3. Ines Raushenbach, Ph.D. (2011)
   Molecular Bioscience Graduate Program (Rutgers- NB)
   Title of Ph.D. Dissertation: Growth, Genes, Genomes – Insights into Microbial Respiration of Arsenic and Selenium
4. Dimitri Ntarlagiannis, Ph.D. (2006)
   Environmental Science Joint Program (Rutgers-Newark/NJIT)
   Title of Ph.D. Dissertation: Geophysical imaging of microbial biofilms and biomineralization processes
5. Thipnakarin Boonfueng, Ph.D. (2006)
   Department of Civil and Environmental Engineering (NJIT)
   Title of Ph.D. Dissertation: The impact of abiotic and biogenic Mn oxide coatings on metal sequestration
6. Ying Xu, Ph.D. (2005)
   Department of Civil and Environmental Engineering (NJIT)
   Title of Ph.D. Dissertation: Experimental and modeling studies of metal adsorption on oxide coatings

Master's Students: Primary Advisor

1. Thomas Wang
   Environmental Sciences Graduate Program (Rutgers-NB)
   Title of Thesis: The Effect of Mercury Oxidation on Hg Stable Isotope Fractionation
   Expected Graduation 2017
2. Nicholas Rose (2013)
   Microbial Biology Graduate Program
   Title of Expository Essay: Molecular Mechanisms for Electron Transfer to Anodes in *Geobacter sulfurreducens* and *Shewanella oneidensis*
3. Joanne Theisen, M.S. (2012)
   Environmental Sciences Graduate Program (Rutgers-NB)
   Title of Thesis: Genetic Investigation of Se(VI) and Te(VI) Reduction Processes in Facultative Anaerobic Bacteria
4. David Mack, M.S. (2006)
   Environmental Science Joint Program (Rutgers-Newark/NJIT)
   Title of Expository Essay:: The effect of pH on microbial selenium oxyanion reduction

Master's Students: Co-Advisor

1. Micheal O'Brien, M.S. (2009)
   Environmental Science Joint Program (Rutgers-Newark/NJIT)
   Title of Project: Self potential signatures of microbial Se(VI) reduction
2. Yves Personna, M.S. (2007)
   Environmental Science Joint Program (Rutgers-Newark/NJIT)
   Title of Project: Geophysical imaging of FeS biomineralization by sulfate reducing bacteria

Membership on Doctoral Examination Committee

1. Nikki Koribanics
   Molecular Bioscience Graduate Program
   Rutgers University - New Brunswick

2. Phil Sontag
   Environmental Science Graduate Program
   Rutgers University - New Brunswick
3. Sarah Jansen
   Environmental Science Graduate Program
   Rutgers University - New Brunswick
3. Sarah Wolfson
   Environmental Science Graduate Program
   Rutgers University - New Brunswick
4. Ben Jelen
   Environmental Science Graduate Program
   Rutgers University - New Brunswick
5. Chi Zhang (2012)
   Department Earth and Environmental Sciences
   Rutgers University - Newark
6. Jennifer Kist, Ph.D. (2012)
   Environmental Science Graduate Program
   Rutgers University - New Brunswick
7. Wenyi Zhu, Ph.D. (2010)
   Environmental Science Graduate Program
   Rutgers University - New Brunswick
8. Lora Smith, Ph.D. (2008)
   Environmental Science Graduate Program
   Rutgers University - New Brunswick
9. Hannah Heinrich, Ph.D. (2007)
   Department of Chemistry
   University of Otago – New Zealand
10. Yuxin Wu, Ph.D. (2006)
   Department Earth and Environmental Sciences
   Rutgers University - Newark
11. Xavier Comas, Ph.D. (2005)
   Department Earth and Environmental Sciences
   Rutgers University - Newark

Postdoctoral Trainees

1. Dr. Juyoung Ha (2011-2012)
   Research Associate
   Title of Project: Spectroscopy investigation of Hg-microbe interactions
3. Dr. Xiuhong Zhao (2010 – 2011)
   Postdoctoral Research Associate
   One year of training
   Title of Project: Reduction and methylation of Hg(II) by iron-reducing bacteria
2. Dr. Chuling Guo (2010)
   Postdoctoral Research Associate
   Six months of training
   Title of Project: Selenate and Arsenate Reduction by Thermophilic Archaea
4. Dr. Soumya Das (2007-2008)
   Postdoctoral Research Associate
   One year of training
   Title of Project: Hg(II) interactions with iron minerals
5. Dr. David Ams (2006-2007)
   Postdoctoral Research Associate

One year of training
Title of Project: Pb precipitation by phosphate-releasing bacteria

Independent Study and Undergraduate Research Projects

Chioma Ekedede, Aresty Undergraduate Student (2015 - present)
Beverly Chiu, Undergraduate SAS Honors Student (2014-2015)
Thomas Wang, Undergraduate Student (2011-2014)
Amanda Steitz, George H. Cook Scholar (2012-2013)
Jennifer Marin, Undergraduate Student (2011-2013)
Michelle Wenelczyk, Undergraduate Student (2011)
Joanne Theisen, Undergraduate Student (2010-2011)
Phyllis Ko, Undergraduate Student (2009-2011)
Francis Jordan, Graduate Student (2007-2008)
Howard K. Eichenblatt, Undergraduate Student (2007-2008)
Tammy Wang, Undergraduate Student (2007)
Erik Sakowski, Undergraduate Student (2006)
Ankur Dalia, George H. Cook Scholar (2006)
Hong Zhou, Graduate Student (2005)
Rafael Jusino Graduate Student (2005)
Xavier Comas, Graduate Student (2005)
Alejandro Ruiz, Graduate Student (2005)

IX. Service

Reviewer for Journals: *Geochimica et Cosmochimica Acta; Environmental Science & Technology; Chemical Geology; Science; Geology; Environmental Microbiology; Frontiers in Microbiology; FEMS Microbiology Ecology; Soil Biology & Biochemistry; Applied Geochemistry; Geomicrobiology Journal; Soil Biology & Biochemistry; Microbiology; Aquatic Geochemistry; Aquatic Microbial Ecology; Applied Microbiology and Biotechnology; Journal of Colloid and Interface Science; Water Research; Geochemical Transactions; Soil Science Society of America Journal; Archive für Hydrobiologie; Colloid and Polymer Science; Journal of Environmental Quality; Bulletin of Environmental Contamination and Toxicology*

Reviewer for Grant Proposals
National Science Foundation: Low Temperature Geochemistry and Geobiology Program
National Science Foundation: IGERT Program
National Science Foundation: Hydrologic Sciences Program
National Science Foundation: Biogeosciences Program
NASA: Mars 2020
NASA: NASA Astrobiology Institutes
NASA: Exobiology and Evolutionary Biology Program
NIH: National Institute of Environmental Health Sciences
U.S. Department of Energy: Environmental Remediation Sciences Program
U.S. Department of Energy: Environmental Molecular Sciences Laboratory User Proposals
U.S. Department of Agriculture: Soil Processes Program
Swiss National Science Foundation: Div. of Mathematics, Physical and Engineering Sciences
American Chemical Society: Petroleum Research Fund

Science Steering
2013: Co-Chair, Mercury Biogeochemistry Working Group, DOE Subsurface Biogeochemical Research Program
2013: Invited Participant, NSF-sponsored Workshop on Geomicrobiology and Microbial Geochemistry

2011: External Reviewer, DOE PNNL Subsurface Biogeochemical Research Program
2009: Invited Participant, DOE BER Workshop on Subsurface Complex System Science

Editorship of Scholarly Journals or Professional Publications
6/2015 – present: Subject Editor, *Geobiology*
6/2012 – 5/2015: Editorial Advisory Board, *Geobiology*
12/2006 – 1/2010: Associate Editor, *JGR-Biogeosciences*
08/2003 – 09/2007: Associate Editor, *Geochemical News*

Membership/Offices Held in Scholarly and Professional Societies
Geochemical Society (2000 – present)
Geological Society of America (1999 – present)
American Society for Microbiology (2006 – 2008)
American Geophysical Union (2001– 2011)
Soil Science Society of America (2005 – 2008)

Conference Organizer and Convener
Mercury Biogeochemistry Session Chair, Geological Society of America, Baltimore, 2015
Geomicrobiology Session Chair, Geological Society of America, Baltimore, 2015
Mercury Biogeochemistry Session Chair, Goldschmidt Conference, Sacramento, 2014
Theme Team Member: Biogeochemistry Theme 19, Goldschmidt Conference, Florence 2013
Mercury Working Group Organizer, TES/SBR PI Meeting, Maryland 2013
Travel Grant Committee, Goldschmidt Conference, Knoxville, 2010
Microbes and Minerals Session Chair, ASM General Meeting, Boston, 2008
Biomineralization Session Chair, Goldschmidt Conference, Copenhagen Denmark, 2004
Microbe-Mineral Transformations Session Chair, AGU Chapman Conference, 2008
Aqueous Geochemistry Session Chair, Geological Society of America, Denver, 1999

University Service
Search Committee Chair (2016-2017): Single Particle Cryo-Electron Microscopy, School of Environmental and Biological Sciences and Center for Integrative Proteomics Research (Rutgers-NB)
Search Committee Member (2015-2016): Environmental Microbiology and Biogeochemistry, School of Environmental and Biological Sciences (Rutgers-NB)
Search Committee Member (2014-2015): Fenton Chair, School of Environmental and Biological Sciences (Rutgers-NB)
Department Equipment Committee (2011-present): Department of Environmental Sciences (Rutgers-NB, SEBS)
Cirriculum Committee (2009-2012): Department of Environmental Sciences (Rutgers-NB, SEBS)
Search Committee Chair (2010-2011): Earth and Planetary Science Position - Department of Earth and Planetary Sciences (Rutgers-NB, SAS)
Admissions Interviewer (2010): General Honors Program (Rutgers-NB, SEBS)
Admissions Committee Member (2010): Graduate Program in Microbial Biology (Rutgers-NB, SEBS)
Admissions Committee Member (2006-2009): Graduate Program in Environmental Sciences (Rutgers-NB, SEBS)
Undergraduate Curriculum Committee (2008): Department of Earth and Planetary Sciences (Rutgers-NB, SAS)
Graduate Program Ad Hoc Committee (2008-2009): Proposal for a Graduate Program in Microbiology (Rutgers-NB)
Search Committee Member (2008-2009): Environmental Science Position - Department of Environmental Sciences (Rutgers-NB, SEBS)

Search Committee Member (2004-2005): Environmental Geology Position - Department of Earth and Environmental Sciences (Rutgers-Newark)
Search Committee Advisory Member (2004-2005): Environmental Chemistry Position - Department of Chemistry and Environmental Sciences (NJIT)
Search Committee Member (2005-2006): Geochemistry/Sedimentology Position - Department of Earth and Environmental Sciences (Rutgers-Newark)
Search Committee Member (2005-2006): Ecology and Evolution Position - Department of Biological Sciences (Rutgers-Newark)