

## **JOHN D. COATES**

### **PRESENT POSITIONS**

#### **Professor of Microbiology**

Rm 271 Koshland Hall  
Department of Plant & Microbial Biology  
University of California, Berkeley  
Berkeley, CA 94720-3102

#### **Geological Scientist Faculty**

Earth Sciences Division  
Lawrence Berkeley National Laboratories  
Berkeley, CA 94720

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### **CURRENT PROFESSIONAL TITLES:**

1. Professor of Microbiology, UC Berkeley
2. Geological Scientist Faculty, Lawrence Berkeley National Laboratories
3. Co-founder/Board Member of *BioInsite LLC*, 2002 - present.
4. Director of the UC Berkeley/LBNL Microbial Enhanced Hydrocarbon Recovery Program (MEHR) (2011-present)
5. Member of the EBI Executive Committee (2012 – present)
6. Chairman of the joint UC Berkeley-LBNL/BP committee on souring cause and control (2012-present)
7. Member of the Scientific Advisory Committee, Universal Bio Mining, LLC (2012-present)
8. Member of the Scientific Advisory Committee, University of Montréal GenoRem program (2011-present)

### **EDUCATION:**

PRIMARY DEGREE:- 1982 - 1986, Dublin City University (DCU)

Ph.D. DEGREE:- 1986 - 1991, University College Galway (UCG)

### **THESIS AND POSTDOCTORAL ADVISORS**

<u>Graduate Advisor.</u>	Prof. Emer Colleran
<u>Postdoctorate Advisor 1.</u>	Dr. Michael McInerney
<u>Postdoctorate Advisor 2.</u>	Dr. Derek Lovley

### **PROFESSIONAL EXPERIENCE AND CURRENT POSITION**

- 1 RESEARCH ASSISTANT:- May 1983 - Sept. 1983: Department of Biological Sciences, Dublin City University under the direction of Dr. Owen P. Ward.
- 2 RESEARCH ASSISTANT:- May 1984 - Sept. 1984: Cemici Teoranta Inc., Ireland under the direction of Dr. Jack O'Shea.
- 3 RESEARCH ASSISTANT:- April 1985 - Sept. 1985: Department of Biological Sciences, Dublin City University under the direction of Dr. Owen P. Ward.
- 4 RESEARCH ASSISTANT:- 1986 - 1988: Department of Microbiology, University College, Galway, Ireland under the direction of Professor Emer Colleran.

- 5 RESEARCH ASSISTANT:- 1988 - 1989: Production Research and Development Facility, Interbio Laboratories Inc., Ireland.
- 6 RESEARCH ASSISTANT:- 1989 - 1991: Department of Microbiology, University College, Galway, Ireland under the direction of Professor Emer Colleran.
- 7 POSTDOCTORATE RESEARCH ASSOCIATE:- 1991 - 1993:- Department of Microbiology, University of Oklahoma under the direction of Dr. Michael McInerney
- 8 POSTDOCTORATE RESEARCH ASSOCIATE:- 1993 - 1995:- U.S. Geological Survey, Virginia under the direction of Dr. Derek Lovley
- 9 ACTING RESEARCH DIRECTOR OF MICROBIOLOGY:- 1995 - 1997: U.S. Geological Survey, Virginia.
- 10 ASSISTANT PROFESSOR:- 1997 – July 2002: Department of Microbiology, Southern Illinois University, Carbondale, IL
- 11 ASSOCIATE PROFESSOR: July 2002 – July 2007: Department of Plant and Microbial Biology, UC Berkeley, Berkeley, CA
- 12 GEOLOGICAL SCIENTIST FACULTY – Oct. 2003 – present: Earth Sciences Division, Lawrence Berkeley National Laboratories, Berkeley, CA 94720
- 13 PROFESSOR: July 2007 – Present: Department of Plant and Microbial Biology, UC Berkeley, Berkeley, CA

**SOCIETY MEMBERSHIP:** Member of the American Society for Microbiology (ASM).  
 Member of the American Chemical Association (ACS).  
 Member of the International Humics Substances Society (IHSS)  
 Member of the American Geophysical Union (AGU)

**EDITORSHIP:** Associate editor for Frontiers of Microbiology  
 Associate editor for Faculty 1000 world wide web based database

#### **TECHNOLOGIES DISCLOSED AND PATENTS PENDING**

- 1 “Bio-Sensor for determining the concentration of chlorite in environmental samples”
- 2 “Biological oxygen generation for space travel”
- 3 “Stimulation of organic contaminant degradation by the addition of chlorite”
- 4 “A novel treatment to prevent deep wound infection”
- 5 "A microassay for measurement of chlorite and perchlorate" (patent pending)
- 6 “A specific immunoprobe for perchlorate-reducing bacteria” (patent pending)
- 7 “Biological swine waste odor control” (patent pending)
- 8 “Biological anaerobic treatment of BTEX contamination” (patent pending)
- 9 “Biotreatment and immobilization of heavy metals and radionuclides”
- 10 “Bioelectrochemical treatment of perchlorate and chlorate” (patent pending)
- 11 “Bioelectrochemical treatment of xenobiotics” (patent pending)
- 12 “Colorimetric Bioassay for perchlorate” (patent pending)
- 13 “Microbial authigenic rock mineral precipitation as a means of alteration of hydrology flow paths in an oil reservoir to improve sweep efficiency and enhance oil recovery” (Provisional Patent filed Oct. 24<sup>th</sup>, 2011)
- 14 “Small molecule inhibition of ATP sulfurylase and adenylyl-sulfate reductase as a means to reduce oil souring” (IDF submitted May 30<sup>th</sup>, 2012)
- 15 “Heavy oil bioconversion” (IDF submitted Jul 20<sup>th</sup> 2012)

- 16 “Microbial concretion as a means of controlling wormhole events during oil recovery from unconsolidated matrices” (IDF submitted May 31<sup>st</sup> 2012)
- 17 Microbial metabolism of chlorine oxyanions as a control of biogenic hydrogen sulfide production (Provisional Patent filed Jun 3<sup>rd</sup> 2011).
- 18 "Purification of Cerium from Lanthanide Mixtures"(IDF submitted January 9<sup>th</sup> 2012)

**NATIONAL/INTERNATIONAL PRESS:**

- 1 ASM News Journal Highlights (1996) 62: 361
- 2 Perspectives Magazine (Oct. 1998)
- 3 Southern Illinoisan (Dec., 1998)
- 4 Daily Environment Report (Dec., 1998)
- 5 Chemical & Engineering News (Jan., 1999)
- 6 Industrial Bioprocessing Alert (Jan., 1999)
- 7 Technology catalysts (Apr., 1999)
- 8 Environmental Science & Technology News 4:515A (Dec. 1999)
- 9 US Congressional Press release (Aug. 2000)
- 10 University Press release (Sept. 2000)
- 11 Associated Press release (Sept. 2000)
- 12 Daily Egyptian (Oct 6. 2000)
- 13 Southern Illinoisan (Sept. 2000)
- 14 NPR-Chicago (Oct. 2000)
- 15 ABC News (Sept. 2000)
- 16 Voice of America Radio (Oct. 2000)
- 17 SIU Main web page (Oct. 2000)
- 18 American Society for Microbiology “Microbe World” web site (Nov. 2000)
- 19 Biocentury Publications (July, 2001)
- 20 National Public Radio Boston “Living on Earth” (July, 2001)
- 21 Bloomberg News Wire Service (July, 2001)
- 22 Folha de Sao Paulo (Brazilian National NewsPaper) (July, 2001)
- 23 The Globe and Mail (Canadian National Newspaper) (July, 2001)
- 24 Canadian Broadcasting Corp. “Information Morning” Radio Show (July, 2001)
- 25 CNN “Science and Technology Week” (June 2001)
- 26 WSIL Local TV News (July 2001)
- 27 The Guardian (British National Newspaper) (July, 2001)
- 28 Environmental Science and Technology News Update (July, 2001)
- 29 Popular Mechanics (Oct 2001, vol 178)
- 30 National Public Radio, Carbondale (Jan 2003)
- 31 ASM Microbe Journal Highlights (2005) 71: 477
- 32 Science at Berkeley Labs (2007)
- 33 ASM Microbe Journal (2008) 3(10)
- 34 PBS Television Nova Science Show (Dec 2008)
- 35 Techmonitor.net ([http://www.techmonitor.net/techmon/09jan\\_feb/was/was\\_bioremediation.htm](http://www.techmonitor.net/techmon/09jan_feb/was/was_bioremediation.htm)) (Jan 2009)
- 36 ASM Microbe Journal (2009) 4(4):Graduate student (Kelly Wrighton) award and profile
- 37 ASM Microbe Journal (2009) 4(6):281-287
- 38 Toronto Star (2013)

## **AWARDS:**

- 1 1983 Recipient of the Irish Development Authority Student Development Award
- 2 1984 Recipient of the Irish Development Authority Student Development Award
- 3 1998 Recipient of the Oak Ridge Ralph E. Powe Young Faculty Enhancement Award
- 4 2001 Invited panel member and thrust area leader at the US-Egypt Workshop in Microbial Ecology at the National Research Center of Egypt in Cairo, Egypt
- 5 2001/2002 Invited visiting Scientist for summer (2002) to Institute for X-Ray Physics, University Georgia Augusta at Göttingen, Germany.
- 6 2001 Joint recipient of the DOD SERDP Program Project of the Year.
- 7 2002 Recipient of the SIUC College of Science Researcher of the Year Award
- 8 2004 Recipient of the Shaw Environmental and Infrastructure Inc. recognition award
- 9 2005 Recipient of the University of California Berkeley Summer Research Opportunity Program Recognition award for mentorship
- 10 2008-present Member of the UC Berkeley Amgen Faculty Advisory Board
- 11 2009 Nominee for election to Fellowship in the American Academy of Microbiology
- 12 2011 ASM Division Q lecturer at the 111<sup>th</sup> General Meeting

## **INVITED PRESENTATIONS:**

### **National**

1. Invited speaker at UC Berkeley-BP strategic workshop on “Water and Bioenergy” (2012)
2. Invited speaker at Navy SpaWar Research Center, Pacific, San Diego (2012)
3. Invited speaker (2 presentations) at UC Berkeley-BP workshop on Petroleum Microbiology (2012)
4. Invited speaker at AEHS West Coast Conference San Diego (2012)
5. Invited Division Q lecturer at the 111<sup>th</sup> ASM General Meeting 2011
6. Keynote address at Remediation Technology Summit (RemTech) Chicago, IL 2011
7. Invited presentation at the Association for Environmental Health and Sciences Foundation (AEHS) San Diego, CA 2011
8. Invited presentation University of Minnesota 2010
9. Invited presentation University of Iowa 2009
10. Invited keynote address “metals in biology” symposium Duquesne University 2009
11. Keynote address at Micropol 2009 symposium (San Francisco)
12. Invited presentation at Society for Industrial Microbiology, Jun 2009 (presentation given by C. Thrash on my behalf)
13. Keynote address at Mars Chemistry Workshop, Medford MA 2009
14. Invited presentation Dept. of Chemical Engineering, Stanford University 2009
15. Invited presentation Dept. of Microbiology, Cornell University Ithica, NY 2008
16. Invited presentation Dept. of Microbiology, Oklahoma State University OK 2008
17. Invited speaker at the American Geophysical Union (AGU) Annual Meeting session on "Geomicrobiology and Biogeochemistry of Iron and Manganese" conference to San Francisco 10-14 December, 2007
18. Invited speaker at the American Geophysical Union (AGU) Annual Meeting session on "perchlorate in the environment" conference to San Francisco 10-14 December, 2007
19. Invited speaker at the Battelle In Situ and On-Site Bioremediation Symposium, Baltimore, MD (May 2007).

20. Invited speaker at the DOE ERSP program annual meeting, Lansdowne, VA, 2007.
21. Invited presentation at University of California, Los Angeles, CA (2006)
22. Invited speaker at the 232nd ACS National Meeting, San Francisco, CA, September 10-14, 2006
23. Invited keynote speaker at the “X-ray Spectromicroscopy: a Tool for Environmental Sciences”, Argonne National Lab, IL 2006
24. Keynote speaker at the Water Resource Institute conference on “Perchlorate in Groundwater”, San Bernadino, CA (2006)
25. Invited keynote speaker at the GRAC symposium “Perchlorate: Progress Toward Understanding and Cleanup”, Santa Clara, CA 2006
26. Invited presentation at LBNL Earth Sciences Division External Review (2006)
27. Invited presentation at UCB Dept of Civil and Environmental Engineering (2006)
28. Invited speaker at the GSA symposium “Perchlorate and other oxyanions in the hydrological cycle”, Salt Lake City, UT 2005
29. Keynote speaker at Notre Dame University Environmental Engineering annual student symposium, IN (2005)
30. Invited speaker at the DOE NABIR PI annual meeting, Warrenton, VA, 2005.
31. Invited speaker at the USGS Menlo Park CA seminar series, 2004.
32. Invited presentation at UC Santa Cruz, CA (2004) (Declined)
33. Invited presentation at the Office of the Illinois EPA, Springfield IL (2004).
34. Invited speaker at the 2004 GRAC symposium on Perchlorate in the Environment, Glendale, CA (2004)
35. Invited keynote speaker at the Humic Seminar series, Northeastern University, Boston, MA 2004
36. Invited keynote speaker at the Annual Meeting of the Association for Environmental Health and Sciences, Boston, MA 2003
37. Invited presentation at California Institute of Technology, CA (2003)
38. Invited presentation at Joint Propulsion Laboratories, Pasadena, CA (2003)
39. Invited presentation to microbial seminar series UC Berkeley, Berkeley, CA (2003)
40. Invited presentation at United Sciences Industries, Woodlawn, IL (2003)
41. Invited speaker at the SERDP “Partners in Environmental Technology” technical symposium, Arlington, VA, 2002
42. Invited presentation at the University of Iowa, IA (2002)
43. Invited presentation at the Office of the Illinois EPA, Springfield IL (2002).
44. Invited presentation at University of Georgia, Athens GA (2002)
45. Invited presentation at Los Alamos National Laboratories (2002)
46. Invited speaker at the ASM Biotechnology Investor Forum, Washington, DC, 2002
47. Interview presentation at UC Berkeley (2001)
48. Invited presentation at the University of Illinois, Urbana IL (2001)
49. Invited speaker at the DOE NABIR PI annual meeting, Warrenton, VA, 2001.
50. Invited presentation at Cornell University (2001).
51. Invited speaker at the DOE sponsored Metals and Microbes Workshop, Warrenton, VA, 2000.
52. Invited speaker at the ONR Marine Sediments Processes Workshop, San Diego, Ca, 2000.
53. Invited speaker at American Geophysical Union Fall Meeting, San Francisco, CA, 2000.
54. Invited speaker at Argonne National Laboratories, Chicago, IL (2000)
55. Invited seminar to the Illinois Consortium for Agricultural Research (2000)
56. Invited presentation at Southern Illinois University, Carbondale, IL (2000)
57. Invited presentation at Northwestern University, Chicago, IL (2000)

58. Invited presentation at the DOE-NABIR PI Workshop, Reston, VA, 2000.
59. Invited speaker at the “Geochemical Perspectives on Environmental Processes (GPEP-2000)”, Washington University, St Louis, MO, 2000
60. Invited speaker at the SERDP “Partners in Environmental Technology” technical symposium, Arlington, VA, 1999.
61. Invited presentation at the DOE-NABIR PI Workshop, Reston, VA, 1999.
62. Invited seminar to the Illinois Consortium for Agricultural Research (1999)
63. Invited presentation at the Department of Geology, Southern Illinois University (1998).
64. Oral presentation at the 5th International Petroleum Environmental Conference, Albuquerque, NM (1998).
65. Invited seminar to the Illinois Consortium for Agricultural Research (1998)
66. Invited presentation to Sybron Biochemicals Inc., Salem, VA (1998)
67. Invited presentation to University of Missouri, Columbia, MO (1998)
68. Invited presentation at University of New Hampshire, NH (1998)
69. Invited presentation at Southern Illinois University, Carbondale, IL (1997)
70. Invited presentation at University of Maryland Chesapeake Biological Laboratory (1997)
71. Invited seminar at “Emerging Technologies in Hazardous Waste Management IX”, Special 1997 Symposium of the Industrial and Engineering Chemistry Division of the American Chemical Society, Pittsburg, PA.
72. Invited speaker at the Anaerobic Biogeochemical Processes session at the 97th Annual Meeting of the American Society for Microbiology, Miami, FL, 1997
73. Invited speaker and poster presentation at the “Environmental Sciences: Water” Gordon Conference, June 1996.
74. Invited presentation at Johns Hopkins University, Baltimore MD, (1996)
75. Invited presentation at the Louisiana University Marine Consortium, New Orleans LA (1996)
76. Oral presentation at American Geophysical Union, Ocean Sciences meeting, San Diego, CA, 1996.
77. Invited speaker at American Geophysical Union Fall 1996 meeting San Francisco, CA, 1996.
78. Invited presentation at John Hopkins University, MD, 1996.
79. Invited presentation at University of Virginia, 1996.
80. Invited presentation at University of Alabama, 1996.
81. Invited presentation at American Geophysical Union Fall 1996 meeting San Francisco, CA, 1996.
82. Invited presentation at Princeton University, Princeton, NJ, 1995.
83. Invited speaker at the 1995 Annual General Meeting of the Society for Industrial Microbiology, San Jose, Calif. USA.
84. Invited speaker at the Naval Command, Control and Ocean Surveillance Center, San Diego, CA, 1994.
85. Invited speaker at the U.S. Geological Survey, Reston, VA, 1993.
86. Invited presentation at the University of Oklahoma, Norman, OK, 1992.

### **International**

87. Invited speaker University of Calgary, Canada (2012)
88. Speaker at the 18<sup>th</sup> Reservoir Microbiology Forum 2012 (two presentations), London, UK
89. Invited presentation at University of Manchester, UK (2012)
90. Invited presentation at BP Research Facility, Sunbury, UK (2012)

91. Invited speaker at the 22<sup>nd</sup> V.M. Goldschmidt Conference, Montreal, Canada 2012
92. Invited speaker at the 2012 Atacama-Astrobiology-Cancer Symposium, Antofagasta, Chile
93. Invited keynote speaker at the 2012 FIMIN workshop on environmental iron microbiology, Manchester, UK.
94. Speaker at the Goldschmidt 2011 Conference, Prague Czech Republic
95. Invited presentation at the 20<sup>th</sup> Annual Meeting of the International Society for Environmental Biogeochemistry, Istanbul, Turkey (declined offer)
96. Invited presentation at the “Methane on Mars” workshop, Frascati, Italy, 2009
97. Keynote address at Korean Society for Microbiology General Meeting, Seoul Korea, 2008
98. Invited presentation at Korea Institute of Bioscience and Biotechnology, Sept. 2008
99. Invited speaker at the 2008 108<sup>th</sup> American Society for Microbiology annual general meeting, Boston, MA
100. Keynote address at the 14<sup>th</sup> International Meeting of International Humic Substances Society, September 14<sup>th</sup>-20<sup>th</sup>, 2008 in Moscow/Saint Petersburg, Russia
101. Invited presentation Center for Applied Geoscience (ZAG), Eberhard-Karls-University Tuebingen, Germany
102. Invited speaker at the 2007 107<sup>th</sup> American Society for Microbiology annual general meeting, Toronto, Canada
103. Invited keynote speaker the Workshop on Microorganisms – Water and Aquifers, Negev, Israel 2005 (declined invitation)
104. Invited keynote speaker at the IMCAS Microbiology Symposium, Beijing, China, 2005
105. Invited keynote speaker at the International Workshop on Biogeochemical Processes Involving Iron Minerals in Natural Waters, Ascona, Switzerland, 2003 (presentation given by Karrie Weber on my behalf)
106. Invited speaker at William Smith Conference, London UK, 2002
107. Invited seminar at University of Newcastle, UK 2002
108. Invited seminar at the University of Manchester, UK 2002
109. Invited speaker at the Goldschmidt Conference, Davos, Switzerland, 2002
110. Invited seminar at the UFZ Center for Environmental Research, Leipzig, Germany (2002)
111. Invited seminar at the University of Bayreuth, Germany (2002)
112. Invited speaker at the US-Egypt Workshop in Microbial Ecology, Cairo Egypt, May 2001
113. Invited keynote speaker at the Second Symposium on “Refractory Organic Substances in the Environment (ROSE II)”, Karlsruhe, Germany, 2000.
114. Invited speaker at the Natural Organic Matter (NOM)-typing meeting, Kristiansand, Norway, 1998.
115. Invited keynote speaker at the Symposium on Refractory Organic Substances in the Environment”, Karlsruhe, Germany, 1997.
116. Invited speaker at the 7th International Symposium on Microbial Ecology, 1995, Santos, Brazil.

#### **COMMERCIAL:**

Co-founder of *BioInsite LLC*, 2002.

#### **PROFESSIONAL SERVICE:**

1. 1997 Department of Energy Panelist for Review of proposals in the Natural and Accelerated Bioremediation Research Program (NABIR).

2. 1998 National Science Foundation Review Panelist of proposals in the Environmental Engineering SBIR program
3. 1999 National Science Foundation Review Panelist of proposals in the Biotechnology SBIR program
4. Chairman of “Reactivity of Humic Substances” Session at the Symposium on Refractory Organic Substances in the Environment”, Karlsruhe, Germany.
5. Invited member of an International team for the Classification of Natural Organic Materials (NOM)
6. Invited to convene session on "Deep Subsurface Microbial Fe(III) reduction" at International Symposium on Subsurface Microbiology (ISSM99), Vail Colorado.
7. 1999/2000 Department of Energy Panelist for Review of proposals in the Natural and Accelerated Bioremediation Research Program (NABIR).
8. 2000 National Science Foundation Panelist for review of proposals in the Small Businesses Innovative Research program (SBIR)
9. Convener and discussion leader of presentations on “Biological Interactions with Humic Substances” at the Symposium on Refractory Organic Substances in the Environment (ROSE II)”, Karlsruhe, Germany (2000).
10. Convener and session organizer on “Anaerobic Bio-oxidation of Metals” at the DOE sponsored Metals and Microbes Workshop, Warrenton, VA, 2000.
11. Co-convener and session organizer on “The microbiology and geochemistry of iron cycling in the environment” at the American Geophysical Union Fall Meeting, San Francisco, CA, 2000.
12. Session organizer and co-convener on “Diverse anaerobic microbial metabolisms” at the 101st Annual Meeting of the American Society for Microbiology, Orlando, Fl, 2001.
13. 2001 Invited panel member and thrust area leader at the US-Egypt Workshop in Microbial Ecology at the National Research Center of Egypt in Cairo, Egypt
14. Session organizer and co-convener on “Anaerobic hydrocarbon degradation” at the 102nd Annual Meeting of the American Society for Microbiology, Salt Lake City, Utah, 2002.
15. Session organizer and co-convener on “Microbial sensory taxis and quorum sensing in diverse environments” at the 104th Annual Meeting of the American Society for Microbiology, New Orleans, LA.
16. 2004 (Aug – Nov) Host to Dr Jan Dolting from Research Institute of Agrobiolgy and Soil Fertility, Wageningen University, The Netherlands
17. 2005 External review panel member of the Chinese National Academy of Sciences Institute of Microbiology in Beijing, China.
18. Technical Panel Member at the Water Resource Institute conference on “Perchlorate in Groundwater”, San Bernadino, CA (2006)
19. Reviewer for the National Academies of Science Report on Long-term Research Needs for D&D at Department of Energy Sites.
20. Ad hoc member of the American Society for Microbiology Colloquium Committee (2006).
21. 2007 Member of the scientific program committee of the 14th International Meeting of the International Humic Substances Society (IHSS).
22. 2007 Invited to visit Shanghai Institute of Plant Physiology and Ecology, Shanghai Institutes for Biological Sciences at the Chinese Academy of Sciences (declined).
23. 2008-Present: Amgen Faculty Advisory Board Member
24. Proposals reviewed for US National Science Foundation, US Department of Agriculture, US Department of Energy, UK Natural Environment Research Council, Canadian National Science Environmental Research Council.



25. 2011-present Member of the UC Berkeley Energy Biosciences Institute Scientific Executive Committee
26. 2011-present Director of the Energy Biosciences Institute *Microbial Enhanced Hydrocarbon Recovery* (MEHR) program.
27. Manuscripts Reviewed for Nature Reviews Microbiology, Nature Biotechnology, Environmental Science and Technology, Biodegradation, Acta hydrochimica et hydrobiologica, Wetlands, Groundwater, Environmental Toxicology and Chemistry, Science, Nature, Archives of Microbiology, Geomicrobiology Journal, Applied and Environmental Microbiology, Microbial Ecology, Environmental Microbiology.

### **SYNERGISTIC ACTIVITIES**

1. 2012 – present - Chairman of the joint UC Berkeley-LBNL-BP oil reservoir biosourcing subcommittee
2. 2008-Present: Amgen Faculty Advisory Board Member and Amgen Scholar advisor
3. Development of a centralized culture collection of perchlorate- and iron-respiring organisms accessible for academic and industrial applications.
4. Development of an enzymatic micro-assay currently adopted by the US EPA as standard method 327 for monitoring chlorite concentrations in drinking and waste water.
5. Development of a universal immunoprobe specific for perchlorate reducing bacteria currently in commercial application.
6. Development of a MPN-PCR technique for enumerating perchlorate-reducing bacteria in the environment currently in commercial application.

### **THESIS ADVISOR AND POSTGRADUATE-SCHOLAR SPONSOR.**

#### **Students Graduated:**

- Royce A. Bruce – graduated 1999 (SIUC) (MSc) – Currently Microbiologist at US Army Dugway Proving Ground
- J. Lack – graduated 2000 (SIUC) (MSc) – Currently Microbiologist at Anheuser-Busch Brewery, St Louis MO
- Jennifer Patrick – graduated 2002 (SIUC) (MSc) – Current position unknown
- Urania Michaelidou - graduated 2004 (SIUC) (MSc) – Currently pursuing PhD at University of Wageningen
- J. Pollock - graduated 2003 (SIUC) (MSc) – Currently pursuing PhD at University of Montana
- R. Chakraborty - graduated 2005 (UCB) (PhD) – Currently postdoctoral associate at LBNL
- Y. Sun (2003-2009) (PhD) - Currently postdoctoral associate at University of Michigan
- C. Thrash (2006-2011) - Currently postdoctoral associate at University of Oregon
- I. Van Trump (2005-2010) - Currently Lead Scientist at Dow Chemical
- D. Goodheart (2005-2010) – Currently pursuing PhD at University of California, Berkeley
- K. Wrighton (2007-2011) - Currently postdoctoral associate at University of California, Berkeley
- F. Kaser (2008-2010) – Currently Project Manager at Energy Solutions

#### **Past/current undergraduate students:**

- Abu Ramin (ChemE) (2003)
- Josefa delaCruz (MCB) (2003-2004)
- Joey Tran (MCB) (2003-2005)

- Emily Chan (MCB) (Biology Fellows award) (2003-2006)
- Stephen Smith (ESPM) (Nathan and Violet David Scholar; Departmental citation for molecular and environmental biology major) (2005-2006)
- Traci Knox (ESPM) (2005-2006)
- Vika Kovpak (PMB) (2006)
- Thuy Nguyen (PMB) (2006)
- Sally Pine (ESPM) (2006)
- Clark Santee
- Sara Moore
- Caroline Chow (2008)
- Justin Ishida (2008)
- Adam Boisvert (2008)
- Shaunt Oungoulian (2008)
- Seema Madan (2008)
- Peter Agbo (2006-2009)
- Lacey Westphal (2009)
- Antinea "Tino" Chair (2010)
- Sarir Ahmadi(2010)
- Eunice Lim (2010)
- Josh Sanchez (2010-2012)
- Sammy Kayed (2010- 2011)
- Joyce Lee (2010-2011)
- Sean Mullin (2011)
- Ouwei Wang (2011-present)
- Hayden Wong (2011-2012)
- Bernice Chu (2011-present)
- Benita Ho (2012)
- Jay Patel (2012)
- Aaron Boussina (2012-present)
- Yong Tae "Andy" Jin (2012-present)
- Annette Liao (2012-present)

**Undergraduate students from other colleges/universities:**

- Hannah Marcus (Chabot College) - Summer 2009 (ELP Internship), Summer 2010, Summer 2011
- Sam Kurth (Whitworth University) - Summer 2012
- Yasmin Peled (UC Santa Cruz) - Summer 2012

**High School students:**

- Jonathan Koo (Schreiber High School, NY) - Summer 2007, Summer 2008
- Jorge Najera [local (East Bay) High School] - Fall 2007
- Connor O'Donohue (Northgate High School, CA) – Summer 2011

**Current graduate students:**

- I. Clark (winner of the 2010 International Huber Technology Prize for work in my lab)

- R. Melnyk (PhD candidate)
- I. Figueroa (PhD candidate)
- C. Carlstrom (PhD candidate)

#### **Postdoctoral Scholars:**

- S. Chaudhuri (1999 - 2001)
- K. Kellaris (2003 – 2005)
- C. Shang (2004 – 2005)
- K. Byrne-Bailey (2006 - 2010)
- K. Gandhi (2006- 2010)
- S. Bose (2007- 2010)
- M. Heinnickel (2007- 2010)
- K. Weber (2002 – 2010) Assistant Researcher with Exceptional PI status)
- H. Carlson (2011-present)
- P. Gregoire (2011-present)
- H. Zhu (2011-present)
- Misha Mehta (2013–present)
- Matt Youngblut (2013-present)

#### **Current/Past Employees:**

- C. McIntosh (2006 – 2012) – Administrative Assistant
- A. Frazer (2009 – 2013) – Laboratory Assistant
- A. Engelbrekton (2006 – present) – Laboratory Assistant
- D. Loutey (2013 – present) - Laboratory Assistant

#### **PUBLICATIONS:**

##### **2013**

1. Clark, I. C., Melnyk, R. A., Engelbrekton, A. & Coates, J. D. Structure and Evolution of Chlorate Reduction Composite Transposons. *mBio* 4, e00379–13–e00379–13 (2013).
2. Zhu, H. & Coates, J. D. Applicability of anaerobic nitrate-dependent Fe(II) oxidation to Microbial Enhanced Oil Recovery (MEOR). *Environ Sci Technol* 130625150224005 (2013). doi:10.1021/es401838b
3. Davila, A. F., Willson, D., Coates, J. D. & McKay, C. P. (2013) Perchlorate on Mars: a chemical hazard and a resource for humans. *Int.Jnl Astrobiol.* 1–5.
4. Van trump, J.I. and Coates, J.D. (2013). Humic substances: global antennae for primary production. *Astrobiology* 13, 476–482.
5. Carlström, C.I., Wang, O., Melnyk, R.A., Bauer, S., Lee, J., Engelbrekton, A., and Coates, J.D. (2013). Physiology and genomic description of the novel marine dissimilatory perchlorate reducing bacterium *Arcobacter* sp. strain CAB. *mBio.* 4, e00217–13–e00217–13
6. Carlson, H.K., Clark, I.C., Blazewicz, S.J., Iavarone, A.T., and Coates, J. D. (2013). Fe(II) oxidation is an innate capability of nitrate-reducing bacteria involving abiotic and biotic reactions *J. Bacteriol.* published ahead of print 17 May 2013
7. Carlson, H.K., Iavarone, A.T., and Coates, J.D. (2013). Surfaceomics and surface-enhanced raman

## **2012**

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9. Byrne-Bailey, K. G. & Coates, J. D. Complete genome sequence of the anaerobic perchlorate-reducing bacterium *Azospira suillum* strain PS. J Bacteriol 194, 2767–2768 (2012).
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