

RONALD C. SIMS

**Professor, Department of Biological Engineering
Director, Huntsman Environmental Research Center
Co-Director, Sustainable Waste-To-Bioproducts Engineering Center
Founding Department Head of Biological Engineering at Utah State University
Past President, Institute of Biological Engineering, USA
Fellow, American Institute of Biomedical and Biological Engineering**

Summary: 260 Publications, with 112 refereed in 35 years at USU with funding at \$14 Million total in Biological Engineering and Environmental Engineering

ResearchGate score of 37.14 & ranking of 95th percentile & h-index of 31 (as of 10/6/2017)

https://www.researchgate.net/profile/Ronald_Sims3/reputation

Google Scholar shows 5886 citations & h-index of 34 & i10-index of 79

Education:

- PhD Biological & Agricultural Engineering, North Carolina State University, Raleigh, NC, 1982
- MS Environmental Engineering, Washington State University, Pullman, WA, 1977
- MS Environmental Biology & Chemistry, School of Public Health, Department of Environmental Sciences and Engineering, University of North Carolina School of Public Health at Chapel Hill, NC 1972
- BS Biology (Chemistry minor), University of Dayton, Dayton, OH, 1970

Research areas:

Biological Engineering related to Public Health, Bioprocess Engineering, Sustainable Energy Engineering, Drinking Water and Wastewater Treatment, Wastes to Bioproducts, Microbial Biofilm Fundamentals, and Bioremediation of Toxic and Hazardous Industry Chemicals

Teaching areas:

Biochemical Engineering, Toxic/Hazardous Waste Treatment, Downstream Processing, Thermodynamics, Transport Phenomena, Biological Treatment of Drinking Water

Employment History & Experience:

- 1/15 – present Professor of Biological Engineering (BE), and Co-Director of the Sustainable Waste to Bioproducts Engineering Center, USU
- 4/10-12/14 Founding Head, Department of Biological Engineering (BE), USU
- 9/03-3/10 Head, Department of Biological & Irrigation Engineering (BIE), USU
- 6/02-9/09 University Programs Coordinator for DOE/ Inland Northwest Research Alliance
- 1996-2003 Director, Utah Water Resources Research Center and Research Laboratory, and Professor, Department of Civil and Environmental Engineering (CEE)
- 1988-1996 Head, Division of Environmental Engineering, and Professor, CEE Department and Professor, Interdisciplinary Program in Toxicology
- 1988-1989 Visiting Engineer with the U.S. Environmental Protection Agency, Robert S. Kerr Environmental Research Laboratory, Ada, OK (Sabbatical)

1988-1990 Head, Division of Environmental Engineering and Associate Professor, CEE Department, and Associate Professor, Interdisciplinary Program in Toxicology

1984-1985 Head, Division of Environmental Engineering and Research Associate Professor, CEE Department and Interdisciplinary Program in Toxicology

1983-1984 Head, Division of Environmental Engineering and Research Assistant Professor, CEE Department and Utah Water Research Laboratory

1982-1983 Research Assistant Professor, CEE Department and joint appointment with the Utah Water Research Laboratory, Utah State University, Logan, UT

1977-1979 Environmental Engineer, Process Engineering Department, Research Triangle Institute, Research Triangle Park, NC

1973-1975 Supervisor, Environmental Control Laboratory, Bayer AG, Verona Dyestuffs Division of Bayer Inc., Mobay Chemical Corporation, Charleston, SC

1972-1973 Director, International Program in Environmental Aspects of Industrial Development, University of North Carolina at Chapel Hill, Chapel Hill, NC

Administrative Employment History & Experience:

8/10-present Co-Director, Sustainable Waste-to-Bioproducts Engineering Center (SWBEC)

4/10-12/14 Head, Department of Biological Engineering (BE), USU

9/03-3/10 Head, Department of Biological & Irrigation (BIE) Engineering, USU

11/96-8/03 Director, Utah Water Research Laboratory, Utah State University, Logan, UT

1984-1996 Head, Division of Environmental Engineering, Civil and Environmental Engineering Department, Utah State University, Logan, UT

1973-1975 Supervisor, Environmental Control Laboratory, Verona Dyestuffs Division, Mobay Chemical Corporation, Charleston, SC

1972-1973 Director, International Program in Environmental Aspects of Industrial Development, University of North Carolina at Chapel Hill, Chapel Hill, NC

USU Academic Programs Teaching (CEE, Biological and Irrigation Eng, and BE Departments)

1982-present: Utah State University Faculty - Undergraduate courses in Biochemical Engineering, Biological Thermodynamics, Bioprocess Engineering, Downstream Processes, Water and Wastewater Treatment Unit Operations and Unit Processes, Agricultural Waste Management, and Land Treatment of Wastes; Graduate courses in Biochemical Engineering, Biophotonics, Downstream Processes, Biological Process Engineering, Biological Waste Treatment Processing, Industrial Waste Treatment, Soil-based Hazardous Waste Management, and Introduction to Research and Teaching/Presentation Methods

Major Research Projects Awarded (PI or Co-PI)

2017-2018 Bioenergy, Nutrient Recycling, and Waste Reduction from Municipal Reclaimed Water. **Utah Science, Technology, and Research (USTAR) Program, Central Valley Water Reclamation Facility, and WesTech-Inc. Engineers.** \$350,000 (PI)

2017-2018 Reuse/Recycling of Produced Water using Halophytic Algae from the Great Salt Lake. **Utah Energy Research Triangle Scholars Program.** \$15,000 (w/student)

2017-2018 Harmful Algal Blooms Management Using Anaerobic Detoxification and Bioenergy Production. **State of Utah Water Research Laboratory.** \$10,000 (PI)

Major Research Projects Awarded (PI or Co-PI) (continued)

- 2015-2016 Sustainable Bioenergy from Produced Water. **Utah Office of Energy Development**. \$125,000 (PI)
- 2015-2017 Bioreactor Application to Utah Industry for Existing Commercial Need for Petroleum Refining Waste Management. **Utah Science Technology and Research (USTAR) Agency**. \$88,000 (PI)
- 2014-2017 Treatment of Municipal, Dairy, and Swine wastes using Anaerobic Processing for Water Quality Improvement and Renewable Bioenergy Production. **WesTech-Inc.**, Salt Lake City and USU Animal Science (\$40,000) (PI)
- 2012-2014 Scale-Up of Algae Bioproducts Production. **USTAR Agency/Synthetic Biomanufacturing Center**. \$270,000 (PI).
- 2012-2014 Scale-Up of Bioplastics and Spider Silt Production from Algae. **USTAR Agency/Synthetic Biomanufacturing Center**. \$519,360 (PI)
- 2011-2012 Algae Testing and Evaluation for Logan Lagoons Upgrade. **Carollo Engineers**, Salt Lake City, UT. \$25,000. (PI).
- 2008-2012 Synthetic Biomanufacturing Center. **State of Utah (USTAR) Agency**. \$7.3 Million total. (PI H. Scott Hinton, Co-PIs: Ron Sims, Daryll DeWald, and Jon Takemoto).
- 2008-2014 Biological Phosphorus Removal Combined with Bioenergy Production Research at the City of Logan Lagoons. David Stevens(PI) and Ronald Sims (Co:PI). **Environmental Department, City of Logan**, Utah. \$491,420.
- 2007-2011 Biofuels and Bioproducts Production from Microalgae. **State of Utah (USTAR) Agency**. \$6.5 Million total (\$1.6 Million - R. Sims, B. Wood, and L. Seefeldt).
- 2006-2008 Biotechnology & Bioremediation Initiative. **Inland Northwest Research Alliance (INRA)**. \$250,000 (PI)
- 2006-2008 FTIR Spectrometer Microscope System for Bioremediation. **U.S. Department of Defense**, U.S. Army Research Office. \$160,000 (Co-PI)
- 2005-2008 Genomic Sequencing of Polycyclic Aromatic Hydrocarbon Degrading Non-Pathogenic Mycobacteria. Miller, C.D., A.J. Anderson, and R.C. Sims (**U.S. DOE/ Joint Genome Institute**, \$1.5 Million with sequencing paid for and conducted through DOE/JGI)
- 2004-2007 Plant Root-mycobacterium Interactions Beneficial in Remediation of Polyaromatic Hydrocarbons (PAH). Anderson, A.J., C.D. Miller and R.C.Sims **National Science Foundation**, \$473,000 (Co-PI)
- 2003-2009 Evaluating Hyporheic Zone Biodegradation/Attenuation of MTBE & Other Oxygenates. R.C. Sims **American Petroleum Institute**, \$95,866 (PI)
- 2001-2005 Removal of Pharmaceutical Chemicals in Drinking Water Treatment Systems **Pfizer Global Research and Development**. \$150,000 (Co-PI)
- 2000-2005 Fate of Surfactants in Land Treatment Plant-Soil Systems **Alkyl Phenol Ethoxylates Research Council (APERC)**, \$180,000 (PI)
- 1999-2009 MTBE and Petroleum Toxicity and Biodegradation in Contaminated Soils [**American Petroleum Institute**, \$64,134]

- 1998-2003 Utah Training Center for On-Site Wastewater Treatment & Reuse. [**U.S. EPA, Kennecott Copper Corporation, State of Utah Department of Environmental Quality**, \$250,000] (J. L. Sims and R. C. Sims)
- Major Research Projects Awarded (PI or Co-PI) (continued)**
- 1995-2002 Field Scale Relationship of PAH Parent Compound Disappearance to Humification, Mineralization, Leaching, and Volatilization of Transformation Intermediates (**U.S. Environmental Protection Agency** Hazardous Substance Research Center, \$317,800)
- 1995-1999 Revegetation of Exploration and Production Sites. **Exxon Production and Exploration Corporation**, \$60,000 (Co-PI)
- 1994-1998 Guidance for the Use of Prepared Bed Land Treatment as a Bioremediation Technology for PAH and other chemicals **U.S. EPA**, \$180,391 (PI)
- 1994-1996 Vegetation Assisted Remediation of Metal Contaminated Soils for Protection of Public Health. **U.S. Geological Survey**, Washington, DC, \$41,000 (PI)
- 1994-1996 Libby, Montana Superfund Site: Prepared-Bed Bioremediation of PAH and PCP in Buried Lifts & Oxygen Concentration in Soil Gas. **U.S. EPA**, \$150,000 (PI)
- 1992 Bioengineering for Water Cleanup: State-of-the-Art Assessment **National Geographic Society**, Washington, DC, \$41,771 (Co-PI)
- 1991-1996 Treatability Studies for Subsurface Remedial Actions. U.S. EPA Robert S. Kerr Environmental Research Laboratory, **U.S. Environmental Protection Agency**, Ada, OK, \$320,000 (PI)
- 1990-1996 Environmental Behavior of Organic Substances (PAH and PCP) in Soil and Groundwater. **Electric Power Research Institute (EPRI)**, Palo Alto, CA, \$1.9 million (PI)
- 1989-1991 Environmental Contaminant Property Estimation Using Quantitative Structure Activity Relationships (QSARs) (**Department of Defense**, Washington, DC, \$285,000)
- 1988-1992 Biological Hazardous Waste Management of PAH Contaminated Soil Using *Phanerochaete Chrysosporium*: Bioreactor Engineering Design and Operation (**National Institute of Environmental Health Sciences**, Research Triangle Park, NC, \$100,000)
- 1988-1991 Soil Transport/Fate Data Base Design/ Development (Robert S. Kerr Environmental Research Laboratory, **U.S. Environmental Protection Agency**, Ada, OK, \$46,000)
- 1988 Capital Facilities Needs for Water Treatment Plants in the State of Utah: 1989-2008 (**State of Utah Department of Health**, Salt Lake City, UT, \$10,000)
- 1988-1989 Evaluation of the Effect of Deep-Rooted Grasses on Biological Degradation of Polynuclear Aromatic Hydrocarbons (PAHs) in Unsaturated Soil (**Union Carbide Corporation**, Charleston, WV, \$15,000)
- 1987-1990 Evaluation of Cooxidation Mechanisms in the Removal of Polynuclear Aromatic Hydrocarbons from Vadose Zone Soil: In Situ Treatment of Hazardous Waste (Office of Research and Development, Exploratory Research Program, **U. S. Environmental Protection Agency**, Washington, DC, \$222,000)

1987-1991 Soil Treatment Decision-Model Development and Field Evaluation (Robert S. Kerr Environmental Research Laboratory, **U.S. Environmental Protection Agency**, Ada, OK, \$90,000)

Major Research Projects Awarded (PI or Co-PI) (continued)

- 1987-1988 Soil Treatability Studies for PAHs for Land Treatment of Koch Refinery Waste, Minnesota (**Koch Refining Co.**, MN, \$115,000)
- 1987-1989 Laboratory and Field Evaluation of Mechanisms of Particle Removal in Slow Rate Sand Filtration (**Rocky Mountain Energy Corporation**, Denver, CO, \$9,000)
- 1986-1989 Support Studies for Land Treatment Decision-Model Development/Verification and Input Data Generation (R. S. Kerr Environmental Research Laboratory, **U.S. Environmental Protection Agency**, Ada, OK, \$249,000)
- 1986-1989 Use of Structure-Activity Relationships as an Permit Guidance Manual for Land Treatment Demonstrations for Hazardous Wastes (Office of Solid Waste, **U.S. Environmental Protection Agency**, Washington, DC, \$140,000) Aid in Modeling the Subsurface Transport of Organic Contaminants (**U.S. Geological Survey**, Washington, DC, \$80,000)
- 1985-1986 Treatment Evaluation of the Immobilization of Metals Associated with Industrial Wastes in Soil Systems (Region 8, **U.S. Environmental Protection Agency**, Denver, CO, \$30,000)
- 1985-1986 Research Studies for Behavior of Petroleum Organic Chemicals in Unsaturated Soil – Land Treatment Systems (**American Petroleum Institute**, Washington, DC, \$200,000)
- 1984-1986 Protection of Groundwater by Immobilization of Hazardous Metals Associated with Industrial Wastes in Soil (**U.S. Geological Survey**, Washington, DC, \$20,500)
- 1984-1987 Laboratory Treatability Studies and Field Scale Biological Remediation of Coal-Gasification Residues (PAHs) in Soil (**Thunder Basin Coal Company**, WY, \$80,000)
- 1983-1987 Waste-Soil Treatability Studies for Four Complex Industrial Wastes: Two Petroleum and Two Wood Preservative Wastes (Robert S. Kerr Environmental Research Laboratory, **U.S. Environmental Protection Agency**, Ada, OK, \$380,000)
- 1977-1979 Potable Water Treatment by Clinoptilolite Filtration (**International Minerals and Chemical Corporation**, Terre Haute, IN, \$ 40,000)
- 1983-1984 Comparison of Direct Filtration and Conventional Water Treatment Systems for Removal of Pollutants from Source Waters (**U.S. Geological Survey**, Washington, DC, \$40,000)
- 1982-1984 Evaluation of the Mound System of On-Site Waste Disposal for Use in Utah (**State of Utah Mineral Lease Funds**, Utah Water Research Laboratory, Logan, UT, \$42,000)
- 1982-1984 In Situ Treatment Techniques Applicable to Large Quantities of Hazardous Waste Contaminated Soil (Risk Reduction Research Laboratory, **U.S. Environmental Protection Agency**, Cincinnati, OH, \$ 92,000)

1981-1984 Use of Slow Rate Sand Filtration for Providing Drinking Water for Small Communities (**State of Utah Mineral Lease Funds**, Utah Water Research Laboratory, \$60,000)

Refereed Publications:

- Microbial dynamics during anaerobic digestion of microalgal biomass in a USAB reactor. 2017. International Jour. of Microbiology (2017). Doloman, A., Soboh, Y., Sims, R.C., and Miller, C. D.
- Nutrient and suspended solids removal from petrochemical wastewater via microalgal biofilm cultivation. 2017. Chemosphere 174, 46-48. Hodges, A., Fica, A., Wanlass, J., VanDarlin, J., and Sims, R.C.
- Expanded shale flue dust as an additive for the coagulation of wastewater. 2017. Hodges, A., I. Hamud, R. C. Sims, and C. Miller. Int'l Jour. Innov. Res. Sci., Engg, & Technol.: 6(9).
- Hydraulic retention time effects on wastewater nutrient removal and bioproduct production via rotating algal biofilm reactor. 2016. Bioresource Technology 211:527-533. DOI: 10.1016/j.biortech.2016.03.104. Shayan, S., Agbelvor, F., Bertin L., and Sims, R.C.
- Algae-based biofilm productivity utilizing dairy wastewater. Jour. Biological Engineering 10:18-24. DOI: 10.1186/s13036-016-0039-y. 2016. Fica, Z. and Sims, R.C.
- Upflow anaerobic sludge blanket reactor co-digestion of algae and acetate to produce methane. 2016. Water Environment Research. 88:11, 2091-2103. DOI:10.2175/106143016X14504669767490. Soboh, Y., Sorensen, and Sims, R.C.
- Bioenergy from wastewater-based biomass. 2016. AIMS Bioengineering 3(1): 75-96. Sims, R.C., Bedingfield, S., Thompson, and Sims, J.L.
- Techno-economic and lifecycle assessment of an attached growth algal biorefinery. 2016. Bioresource Technology. 220: 360-368. Barlow, J., Quinn, J., and Sims, R.C.
- Biomass and Phycocyanin production from cyanobacteria dominated biofilm reactors cultured using oilfield and natural gas extraction produced water. 2015. Algal Research, 11: 165-168. Jonathan L. Wood, Charles D. Miller, Ronald C. Sims, Jon Y. Takemoto.
- Optimization of a wet microalgal lipid extraction procedure for improved lipid recovery for biofuel and bioproduct production. 2015. Bioresource Technology **193**, 15–24. Sathish, A., Marlar, T. & Sims, R. C.
- Polyhydroxybutyrate production using a wastewater microalgae based media. 2015. Rahman, A., Putman, R. J., Inan, K., Sal, F. A., Sathish, A., Smith T., Nielsen, C., Sims, R. C., and Miller, C. D. Journal of Algal Research, 8:95-98.
- Optimization of wastewater microalgae saccharification using dilute acid hydrolysis for acetone, butanol, and ethanol fermentation. 2015. Castro, Y. A., Ellis, J. T., Miller, C. D., & Sims, R. C. Applied Energy, 140, 14-19.
- Dissolved inorganic carbon enhanced growth, nutrient uptake, and lipid accumulation in wastewater grown microalgal biofilms. 2015. *Bioresource Technology*, 180:7-15. Kesaano, M., Gardner, R. D., Moll, K., Lauchnor, E., Gerlach, R., Peyton, B. M., & Sims, R. C. <http://www.sciencedirect.com/science/article/pii/S0960852414018288>
- Bioenergy from Wastewater-based Biomass. 2015. Medical & Biological Engineering & Computing (MBEC) Journal. Sims, R.C., R. Thompson, & J.L. Sims

- Chitosan-graft-polydiallyldimethyl ammonium chloride for microalgae harvesting from wastewater. 2014. *Desalination and Water Treatment*: 1-7. Anthony, Renil J., and Ronald C. Sims. <http://www.researchgate.net/publication/265848273>
- AFM resolves effects of ethambutol on nanomechanics and nanostructures of single dividing mycobacteria in real-time. 2014. 16:36, 19156 – 19164. Wu, Y., Sims, R.C., and Zhou, A.
- Refereed Publications: (continued)**
- Algal biofilm based technology for wastewater treatment. 2014. *Algal Res.* (5): 231-240. Kesaano, M. & Sims, R. C. doi:10.1016/j.algal.2014.02.003. <http://www.sciencedirect.com/science/article/pii/S221192641400023X>
- Direct measurement and characterization of active photosynthesis zones inside wastewater Remediating and biofuel producing microalgal biofilms. 2014. *Bioresour. Technol.* 156, 206–215. Bernstein, H. C. et al. <http://www.sciencedirect.com/science/article/pii/S096085241400008X>
- Effects of wastewater microalgae harvesting methods on polyhydroxybutyrate production. 2014. *Biores. Technol.* 156:364-367. Rahman, A., Anthony, R. J., Sathish, A., Sims, R. C. & Miller, C. D. doi:10.1016/j.biortech.2014.01.034. <http://www.sciencedirect.com/science/article/pii/S0960852414000595>
- Algae Biomass Based Media for Poly(3-hydroxybutyrate) (PHB) Production by *Escherichia coli*. 2014. *J. Polymers Environ.* 22:272-277. doi:10.1007/s10924-014-0647-x Rahman, A., R. Putman, R.C. Sims, and C. D. Miller.
- An instrument design for non-contact detection of biomolecules and minerals on Mars using fluorescence. 2014. *Jour. Biological Engineering*, 8, 16-22. doi: 10.1186/1754-1611-8-16. Sims, R.C., Smith, H., McKay, C., Duncan, A., Anderson, A., and Grossl, P.
- Metagenome analysis of a methanogenic community within an algal fed anaerobic digester. 2014. *Canadian Journal of Microbiology*, 60:7, 431-435. Ellis, J.T., Sims, R.C., and Miller, C.D.
- Microbial bioproducts from cheese whey through fermentation with wastewater sludge *Clostridium* isolates. 2014. *Canadian Journal of Microbiology*. 60(7): 431-435. Ellis, J.T., Sims, R.C., and Miller, C.D.
- Effect of Moisture on In Situ Transesterification of Microalgae for Biodiesel Production. 2014. *Journal of Chemical Technology & Biotechnology*. 88(1):137-142. <http://onlinelibrary.wiley.com/doi/10.1002/jctb.4125/abstract>. Sathish, A., B. Smith, & R.C. Sims.
- Cationic Starch for Microalgae and Total Phosphorus Removal from Wastewater. 2013. *J. Applied Polymer Science*. doi: 10.1002/app.39470. Anthony, R. & R.C. Sims.
- Secretion of polyhydroxybutyrate in *Escherichia coli* using a synthetic biological engineering approach. 2013 *J. Biol. Eng.* 7, 24. Rahman, A., Linton, E., Hatch, A. D., Sims, R. C. & Miller, C. D.
- Acetone, Butanol, and Ethanol Production from Wastewater Algae. 2012. *Bioresource Technology* 111:491-495. doi:10.1016/j.biortech.2012.02.002 [Ellis, J.T., N. Hengge, R.C. Sims, & C.D. Miller]
- Biodiesel from Mixed Culture Algae via a Wet Lipid Extraction Procedure. 2012. *Bioresource Technology* doi:10.1016/j.biortech.2012.05.118. Sathish, A. and R.C. Sims

Translocation of green fluorescent protein by comparative analysis with multiple signal peptides. 2012. *Biotechnology Journal*, 7:5, 667-676. doi: 10.1002/biot.201100158. Linton, E., Walsh, M.K., Sims, R.C., and Miller, C.D.

Refereed Publications: (continued)

- Monitoring microbial diversity of bioreactors using metagenomic approaches. 2012. In *Reprogramming Microbial Metabolic Pathways: Subcellular Biochemistry*. <http://www.springer.com/biomed/book/978-94-007-5054-8> X., Wang, J., Chen, P. J., Quinn; United Kingdom, 2012; Volume 55. Ellis, J.T., R.C. Sims, and C.D. Miller
- Investigating the Effectiveness of St John's Wort Herb as an Antimicrobial Agent against Mycobacteria. 2012. *Phytotherapy Research*, 26:9, 1327-1333. . doi/10.1002/ptr.3716. Mortensen, T., S. Shen, F Shen, M. K. Walsh, R.C. Sims, and C.D. Miller
- Rotating Algal Biofilm Reactor and Spool Harvester for Wastewater Treatment with Biofuels By-Products. 2012. *Biotech & Bioengg.* 109: 1674-1684. Christenson, L. and R.C. Sims
- Polyhydroxyalkanoate quantification in organic wastes and pure cultures using a single-step Extraction and 1H NMR analysis. *Water Science and Technology* (2012). <http://www.iwaponline.com/wst/06605/wst066051000.htm>. Linton, E., A. Rahman, S. Viamajala, RZ.C. Sims, and C.D. Miller
- Production and Harvesting of Microalgae for Wastewater Treatment and Biofuels and Bioproducts. 2011. *Biotechnology Advances*. 29(6): 686-702. Christenson, L., and R.C. Sims
- Design and Performance of a Solar Photobioreactor Utilizing Spatial Light Dilution. 2011. *Journal of Solar Energy Engineering*, 133 (1): 15001-1 to 15001-7. Dye, D., J. Muhs, B. Wood, and R. Sims.
- In-situ Soil Microbial Detection in the Mojave Desert Using Native Fluorescence. 2011. *Journal of Astrobiology*, 12: 247-257. Smith, H., L. Powers, A. A. Duncan, A. Anderson, R.C. Sims, and C.P. McKay.
- Translocation of Green Fluorescent Protein by Comparative Analysis with Multiple Signal Peptides. 2011. *Biotech Jour.*, 7(5): 667-676. doi: 10.1002/biot.201100158. Linton, E., M.K. Walsh, R.C. Sims, and C.D. Miiller.
- Approach to Bioremediation of Contaminated Soils. 2009. *Hazardous Waste and Hazardous Materials*. 7:2, 117-149. Sims, J.L, Sims, R.C, Matthews, J.E.
- Pyrene Fate Affected by Humic Acid Amendment in Soil Slurry Systems. 2008. *Jour. Biological Engineering*, 2:11. Liang, Y., D. Sorensen, J. McLean, R.C. Sims.
- 13C NMR Analysis of Biologically Produced Pyrene Residues by Mycobacterium sp. Strain KMS in the Presence of Humic Acid. 2007. *Environ. Sci. Technol.*, 41: 242-249. Nieman, K., R. Holz, and R.C. Sims.
- Diversity of Soil Mycobacterium Isolates from Three Sites that Degrade Polycyclic Aromatic Hydrocarbons. *Journal Applied Microbiology* 2007. 102: 1612-1624. Anderson, A., C. Miller, R. Child, J. Hughes, M. Benscai, J. Der, and R.C. Sims.
- Humic Acid Effect on Pyrene Degradation: Finding an Optimal Range for Pyrene Solubility and Mineralization Enhancement. *Appl. Microbiol. Biotechnology*. 2007. *Environ. Biotechnol* 74 (6): 1368-1375. Liang, Y., Britt, D.W, McLean, J.E, Sorensen, D.L, Sims, R.C,

Polycyclic Aromatic Hydrocarbon-degrading Mycobacterium Isolates: Their Association with Plant Roots. *Applied Microbiology Biotechnology*. 2007. *Applied Microbiol. Biotechnol.* 75: 655-663. Child, R., Miller, C., Liang, Y., Sims, R.C, Britt, D., Anderson, A.

Pyrene Mineralization by Mycobacterium sp. Strain KMS in a Barley Rhizosphere. 2007. *Journal of Environmental Quality*. 36: 1-6. Child, R., Miller, C., Liang, Y., Sims, R.C, Anderson, A.J.

Refereed Publications: (continued)

Sorption of Methyl tert-Butyl Ether (MTBE) and tert-Butyl Alcohol (TBA) to Hyporheic Zone Soils. 2007. *Soil & Sediment Contamination Journal*, 16: 423-431. Greenwood, M.H, Sims, R.C, McLean, J.E, Doucette, W.J, Kuhn, J.

Temperature Effect on Tert-butyl Alcohol (TBA) Biodegradation Kinetics in Hyporheic Zone Soils. 2007. *BioMedical Engineering OnLine*, 6:34: 43-41. Greenwood, M.H, Sims, R.C, McLean, J., Doucette, W.J

Theory and Application of Landfarming to Remediate PAHs and Mineral Oil Contaminated Sediments: Beneficial Reuse. 2007. *Journal of Environmental Quality*, 36: 1112-1122. Harmsen, J., Rulkens, W., Sims, R.C, Ritjema, P., Zweers, A.

Study of Biochemical Pathways and Enzymes Involved in Pyrene Degradation by Mycobacterium sp. Strain KMS. 2006. *Appl. & Environmental Microbiology*, 72(12), 7821-7828. Liang, Y., Gardner, D., Miller, C., Anderson, A., Weimer, B., Sims, R.C.

Beneficial Reuse and Sustainability: The Fate of Organic Compounds in the Land-Applied Waste. 2005. *Journal of Environmental Quality*, 34: 29-41. Overcash, M.R, Sims, R.C, Sims, J.L, Nieman, K.C

Development of a Catabolically Significant Genetic Probe for PAH-Degrading Mycobacteria in Soil. 2005. *Journal of Biodegradation*, 16:5, 475-484. Hall, K., Miller, C., Sorensen, D., Anderson, A., Sims, R.C.

Humic Acid Toxicity in Biologically Treated Soil Contaminated with Polycyclic Aromatic Hydrocarbons and Pentachlorophenol. 2005. *Arch. Environ. Contam. Toxicol.*, 49:3, 283-289. Nieman, J.K, Sims, R.C, Sorensen, D.L, McLean, J.E.

Uptake of Nonlyphenol and Nonylphenol Ethoxylates by Crested Wheatgrass. 2005. *Journal of Environmental Toxicology and Chem.*, 24:11, 2965-2972. Doucette, W.J, Wheeler, B.R, Chard, J.K, Bugbee, B., Naylor, C., Carbone, J.P, Sims, R.C.

Isolation and Characterization of Polycyclic Aromatic Hydrocarbon-degrading Mycobacterium Isolates from Soil. 2004. *Journal of Microbial Ecology*, 48(2), 230-238. Miller, C.D, Liang, Y.N, Nieman, K., Hall, K., Sorensen, D.L, Anderson, A.J, Sims, R.C.

Humic acid toxicity in biologically treated soil contaminated with polycyclic aromatic hydrocarbons and pentachlorophenol. 2004. *Archives of Environmental Contamination and Toxicology*, 49:3, 283-289. doi: 10.1007/s00244-004-0138-5. Nieman, K., Sims, R.C, Sorensen, D.L, McLean, J.E.

Catalysis of PAH Biodegradation by Humic Acid Shown in Synchrotron Infrared Studies. 2002. *Environ. Sci. Technol.*, 36:6, 1276-1280. Holman, H.Y, Nieman, J., Sorensen, D.L, Miller, C.D, Martin, M.C, Borch, T., McKiney, W.R, Sims, R.C.

Oxidation of Pentachlorophenol in Manganese Oxide Suspensions Under Controlled Eh and pH Environments. 2002. *Environ. Sci. Technol.*, 36:6, 1276-1280. Petrie, R.A, Gossl, P.R, Sims, R.C.

Fate of Pyrene in Contaminated Soil Amended with Alternate Electron Acceptors. 2001.

- Chemosphere, 44, 1265-1271. Nieman, J., Sims, R.C, McLean, J.E, Sims, J.L, Sorensen, D.L.
- Fate and Behavior of Lead in Soils Planted with Metal-resistant Species (river birch and smallwing sedge). 2000. Journal of Environmental Quality, 29, 1826-1834. Klassen, S.P, McLean, J.E, Grossl, P.R, Sims, R.C.
- Refereed Publications: (continued)**
- [14C]-Pyrene Bound Residue Evaluation Using MIBK Fractionation Method for Creosote-Contaminated Soil. 1999. Environmental Sci. Technol., 33:5, 776-781. Nieman, J., Sims, R.C, Sims, J.L, Sorensen, D.L, McLean, J.E, Rice, J.A.
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- Evaluation of Clinoptilolite-Amended Slow Rate Sand Filtration Economics at Higher than Standard Flow rates. pp. 286-301. In: *Proceedings, 1986 American Water Works Association Annual Conference*, Denver, CO, June 23-28, 1986. (D.R. McNair, *, and W.J. Grenney)
- Land Disposal of Waste Containing Polynuclear Aromatic Compounds. pp. 64-71. In: *Proceedings, International Conference on New Frontiers in Hazardous Waste Management*. EPA-600/9-85-025, Hazardous Waste Engineering Research Laboratory, U.S. Environmental Protection Agency, Cincinnati, OH, Sept., 1985. (*)
- Enhanced Mobility of Polynuclear Aromatic Compounds in Soil Systems. In: *Proceedings, 1985 Annual Specialty Conference in Environmental Engineering*, American Society of Civil Engineers, Boston, MA, July 1-5, 1985. (R.J. Mahmood and *)
- Management of Soil Systems to Optimize Treatment of Polynuclear Aromatic Compounds. pp. 357-368. In: *Proceedings, First Annual Hazardous Materials Management Conference/Southwest*, Houston, TX, Oct. 31-Nov. 2, 1984. (*)
- Comparison of Utah Fill materials for On-Site Waste Disposal. pp. 93-97. In: *Proceedings, Utah Water Pollution Control Association Annual Meeting*, St. George, UT, 1984. (R.A. Watts, J.L.Sims, & *)
- Evaluation of the Mound System for On-Site Waste Disposal. pp. 655-660. In: *Proceedings, 1984 Annual Specialty Conference in Environmental Engineering*, American Society of Civil Engineers, Los Angeles, CA, 1984. (R.A. Watts, J.L. Sims, and *)
- Engineering Parameters for Soil Treatment of Polynuclear Aromatic Compounds. pp. 231-233. In: *1983 Annual Specialty Conference in Environmental Engineering*, American Society of Civil Engineers, Boulder, CO, July, 1983. (* and M.R. Overcash)
- Removal of Microorganisms by Slow Rate Sand Filtration. In: *1983 Annual Specialty Conference in Environmental Engineering*, American Society of Civil Engineers, Boulder, CO, July, 1983. (L. McConnell, *, D.L. Sorensen, B.B. Barnett, and V.D. Adams)
- Slow Rate Sand Filtration for Providing Drinking Water for Small Communities. In: *1983 Annual Specialty Conference in Environmental Engineering*, American Society of Civil Engineers, Boulder, CO, July, 1983. (L.A. Slezak, *, and V. D. Adams)

Books and Proceedings (Including Contributed Portions): (continued)

- In Situ Treatment Techniques Applicable to Large Quantities of Hazardous Waste Contaminated Soils. pp. 226-230. In: *Proceedings, Hazardous Materials Control Research Institute Waste Sites Conference*, Washington, DC, Oct. 31-Nov. 2, 1983. (* and K. Wagner)
- Current Application and Applicability of Slow Rate Sand Filtration in the United States. pp. 347-365. In: *Proceedings, American Water Works Association Annual Conference*, Las Vegas, NV, June, 1983. (L.A. Slezak, *, and V.D. Adams)
- Effect of Sand Size on Removal of Reoviruses and E. coli by Slow Rate Sand Filtration. pp. 367-376. In: *Proceedings, American Water Works Association Annual Conference*, Las Vegas, NV, June, 1983. (L. McConnell, *, D.L. Sorensen, and B.B. Barnett)
- Software Development for Control of the Oxidation Ditch Process. pp. 18-22. In: *Proceedings, Utah Water Pollution Control Assoc. Ann Mtg*, Park City, UT, April, 1983. (D. McIntyre, J.J. Messer, and *)
- Methane Generation from Date Processing Plant Waste Using Anaerobic Packed-Bed Reactors. pp. 23-26. In: *Proceedings, Utah Water Pollution Control Association Annual Meeting*, Park City, UT, April, 1983. (N.M. Lerner, V.D. Adams, and *)
- Land Treatment of Coal Conversion Wastewaters. pp. 18-22. In: *Symposium Proceedings: Environmental Aspects of Fuel Conversion Technology, VI*, Denver, CO, EPA-600/9-82-017, U.S. Environmental Protection Agency, Washington, DC, October, 1981. (* and M.R. Overcash)
- Land Treatment of Priority Pollutant Compounds Identified in Fossil Fuel Wastes. pp. 18-21. In: *Proceedings, Utah Water Pollution Control Association Annual Meeting*, Salt Lake City, UT, April 15-16, 1982. (* and M.R. Overcash)
- Enhanced Nitrification by Addition of Clinoptilolite to Tertiary Activated Sludge Units. *Environmental Letters* 4:27-34, 1973. (* and L.W. Little)

Presentations at Nat'l/Internat'l Professional Conferences: (* indicates authorship)

- Biofilm Microalgae Treats Municipal Wastewater with High Ammonia Concentration. Institute of Biological Engineering 2017 Conference. Salt Lake City (March 30-April 1). (Celeste Hancock and Ronald Sims).
- Hazardous Algal Blooms: Cyanobacterial Microcystin Degradation through Anaerobic Digestion. Institute of Biological Engineering 2017 Conference. Salt Lake City (March 30-April 1). (Kyle Hillman and Ronald Sims).
- Bioenergetic Framework for Evaluating Hydrocarbon Treatment of Energy Industry Wastewater. Institute of Biological Engineering 2017 Conference. Salt Lake City (March 30-April 1). (Igor Pererva, Tyler Gladwin, Ronald C. Sims).
- Qualitative Analysis of Microbial Community during Anaerobic Digestion of Algal Biomass. Institute of Biological Engineering 2016 Conference. Greenville, SC (April 7-9). (Anna Doloman, Ronald Sims, Charles Miller, Utah State University; Yousef Soboh, Palestine Technical College at Arroub).
- Hydrothermal liquefaction of algae from a biofilm cultivation system. Institute of Biological Engineering 2016 Conference. Greenville, SC (April 7-9). (Jay Barlow, Jason C. Quinn, Ronald C. Sims).
- Anaerobic co-digestion of algal biomass and rich carbon source material to produce methane. Institute of Biological Engineering 2014 Conference. Lexington, KY (March 6-8). (Yousef Soboh, Ronald Sims, Darwin Sorensen).
- Application of the rotating algal biofilm reactor for biomass cultivation and nutrient removal. Institute of Biological Engineering 2014 Conference. Lexington, KY (March 6-8). (Terence Smith, Ronald Sims).
- Life cycle assessment and techno-economic analysis of wastewater algae for electric and fuel production. Institute of Biological Engineering 2014 Conference. Lexington, KY (March 6-8). (Ronald Sims, Ashik Sathish, Terence Smith, Jason Quinn).
- Biomass and phycocyanin production from cyanobacterial biofilms cultured in produced water (Oilfield Wastewater) using a rotating algal biofilm reactor. Institute of Biological Engineering 2014 Conference. Lexington, KY (March 6-8). (Jonathan Wood, Ronald Sims, Jon Takemoto).
- Isolation and characterization of anaerobic microorganisms from the Logan City Wastewater Lagoon System for the production of high value bioproducts. Institute of Biological Engineering 2013 Conference. Cary, NC (March 7-9). (Joshua T. Ellis, Neal Hengge, Ronald C. Sims, and Charles D. Miller).
- Economic production of Polyhydroxyalkanoates in *Escherichia coli*. Institute of Biological Engineering 2013 Conference. Cary, NC (March 7-9). (Asif Rahman, Ronald C. Sims, Utah State University; Charles D. Miller).
- Long term algal biomass and FAMES yield from mono and mixed heavy metals exposed batch reactors. Institute of Biological Engineering 2012 Conference. Indianapolis, IN (March 1-3). (Katerine Napan-Molina, Reece Butler, Lihong Teng, Byard Wood, Ronald Sims).
- Biodiesel from mixed culture algae via a wet extraction procedure for lipids. Institute of Biological Engineering 2012 Conference. Indianapolis, IN (March 1-3). (Ashik Sathish, Ronald C. Sims).

Presentations at Nat'l/Internat'l Professional Conferences: (* indicates authorship)

- Acetone, butanol, and ethanol production from wastewater algae. Institute of Biological Engineering 2012 Conference. Indianapolis, IN (March 1-3). (Joshua Ellis, Neal Hengge, Ronald C. Sims, Charles D. Miller).
- Algae Production, Harvesting, and Reaction for Biofuels in a 460-acre Lagoon System. Institute of Biological Engineering 2011 Conference. Atlanta, GA. (March 3-5). (Ronald Sims, Issah Hamud, Reese Thompson, Erick Griffiths, Daniel Dye).
- Mathematical modeling and lipid production in rotating algal photo bioreactors. Institute of Biological Engineering 2011 Conference. Atlanta, GA.(March 3-5). (Paul Woolsey, Ronald Sims (Utah State University), Issa Hamud (City of Logan)).
- Algal biofilm production and harvesting system for water quality improvement with biofuels by-product. (Logan Christenson, Ron Sims (Utah State University), Issa Hamud (City of Logan Environmental Department)).
- Secretion-Based Recovery of Polyhydroxyalkanoates. Institute of Biological Engineering 15th Annual Conference. Cambridge, MA (March 4-6) 2010. (E. Linton, R.C. Sims, and C. Miller).
- Design of a Gene Expression System for *Rhodobacter sphaeroides*. Institute of Biological Engineering 15th Annual Conference. Cambridge, MA. (March 4-6) 2010. (J. Huo, R.C. Sims, and H.C. Hinton)
- City of Logan Environmental Department Integrated Municipal Waste Management Campus. Institute of Biological Engineering 15th Annual Conference. Cambridge, MA (March 4-6) 2010. (I. Hamud, J. Ellsworth, R.C. Sims, K. Kvarfordt).
- Daphnia-Algae Modeling for the Logan Utah Wastewater Lagoons. Institute of Biological Engineering 15th Annual Conference. Cambridge, MA. (March 4-6) 2010. (D. Chea, K. McCulloch, J. Killpack, D. Hullinger, J. Powell, and R.C. Sims).
- Predicting Algal Concentrations Using Aerial Imaging and Statistical Analysis. Institute of Biological Engineering 15th Annual Conference. Cambridge, MA. (March 4-6) 2010. (J. D. Jones, R. Cutler, and R.C. Sims)
- Bioavailability of Ammonium Ions Exchanged onto Clinoptilolite for Potential Algal Biofilm Growth in Facultative Wastewater Stabilization Ponds. Institute of Biological Engineering 15th Annual Conference. Cambridge, MA. (March 4-6) 2010. (A. M. Young and R.C. Sims)
- Algal Biomass from Wastewater for Biodiesel Production. Institute of Biological Engineering 15th Annual Conference. Cambridge, MA. (March 4-6) 2010. (E. Griffiths, S. Viamajala, and R.C. Sims)
- Ecological Engineering of Algal Biofilms for Wastewater Remediation and Biofuel Feedstock. Institute of Biological Engineering 15th Annual Conference. Cambridge, MA. (March 4-6) 2010. (L. Christenson, M. Thomas, A. Young, I. Hamud, and R.C. Sims)
- Investigations into St. John's Work as an Antimycobacterial Medication. Institute of Biological Engineering 15th Annual Conference. Cambridge, MA. (March 4-6) 2010. (T. Mortensen, R. C. Sims, S. Kwon, M. Walsh, and C.D. Miller)
- Transesterification of Intracellular Lipids Using a Single Step Extractive Reaction. . Institute of Biological Engineering 15th Annual Conference. Cambridge, MA. (March 4-6) 2010. (D. Nelson, S. Viamajala, and R.C. Sims)

Presentations at Nat'l/Internat'l Professional Conferences: (* indicates authorship)

- Optimization of Controlled Anaerobic Digestion of Algae. **Poster**. Institute of Biological Engineering 15th Annual Conference. Cambridge, MA. (March 4-6) 2010. (K. Sims, S. Dustin, C. Hansen, R.C. Sims, C. Miller, B. Wood, and I. Hamud)
- Reactor Design for Anaerobic Digestion of Algae. **Poster** Institute of Biological Engineering 15th Annual Conference. Cambridge, MA. (March 4-6) 2010. B. Boissevain, S. Dustin, C. Hansen, I. Hamud, K. Sims, B. Wood, and R.C. Sims).
- Mycobacteria and Soil Remediation at Hazardous Waste Sites. Inland Northwest Research Alliance (INRA) Annual Symposium. Utah State University, Logan, UT (July 26) 2007.. (A. Anderson, C. Miller, Y. Liang, and R.C. Sims)
- Applications of Nuclear Magnetic Resonance (NMR) to Environmental Samples: Incorporation of Toxic PAH Into Microbe Cell Biomass. Inland Northwest Research Alliance (INRA) Annual Symposium, Utah State University, Logan, UT (July 26), 2007. (K. Nieman, R.C. Sims, R. Holz)
- Monitored Natural Attenuation of MTBE at Abby's Corner Utah. Inland Northwest Research Alliance Annual Symposium, USU, UT. July 26, 2007. (Hartle, R., M. Greenwood, and **R.C. Sims**)
- Biodegradation of Pentachlorophenol in Continuous Flow Bioreactors. Intermountain Systems Biology Symposium, Inland Northwest Research Alliance, Utah State University, June, 2007 . K. Albretsen, J. Neff, and R.C. Sims. (**First Place Research Poster**)
- Enhanced Natural Attenuation of Contaminated Soil for Sustainable Restoration. Battelle On-Site and In Situ Bioremediation Symposium, Baltimore, MD. May 7-10, 2007. (**Sims, R.C.**, Miller, C., Anderson, A.)
- Modelling of Landfarming for Remediation of Contaminated Soils and Sediments. Battelle On-Site and In Situ Bioremediation Symposium, Baltimore, MD. May 7-10, 2007 (Harmsen, J., Rulkens, W., **Sims, R.C.**)
- Reduction of the Impact of Contamination by Land Use. . Battelle On-Site and In Situ Bioremediation Symposium, Baltimore, MD. May 7-10, 2007 (Harmsen, J., Rulkens, W., **Sims, R.C.**)
- Photobioreactor for Algal Production of Biodiesel. Institute of Biological Engineering Annual Symposium. St. Louis, MO., March 23 (2006). (S. Merrigan, R.C. Sims, B. Wood, P. Zemke, D. Dye).
- Bioplastics: Sustainable Production through Wastewater Treatment. Institute of Biological Engineering, Arizona State Univ. 2005. (G. Sullivan, E. Linton, D. Nelson, and R.C. Sims)
- Environmental Mycobacteria" Biomedical Research and Applications. Inland Northwest Research Alliance (INRA), Montana State Univ. 2006. (K. Sims, C. Miller, A. Anderson, R.C. Sims, Y. Liang, J. Neff).
- Identification of PAH-Degrading Mycobacteria in Utah Soils. Inland Northwest Research Alliance (INRA), Montana State Univ. 2006. (K. Albretsen, C. Miller, R.C. Sims)
- Soil Microbes that Degrade Persistent PAHs: Identification and Detection. 2006. Institute for Soil Science and Plant Cultivation, Pulawy, Poland. 2005. (K. Hall, F. Olson, J. Sims, K. Sims, R.C. Sims).

Presentations at Nat'l/Internat'l Professional Conferences: (* indicates authorship)

- Genetic Probe for Sensing Microorganisms for Bioremediation System Design: International Application. Poster. F. Olson, K. Hall, J. Harmsen, R. Naumova, O. Yakusheva, C. Miller, A. Anderson and R. Sims. Institute of Biological Engineering (IBE) 10th Annual Symposium, March 4-6, 2005, University of Georgia.
- Synchrotron Radiation Research for Engineering Soil Bioremediation. Wageningen University, Environmental Technology Department, The Netherlands, July 24, 2002 (R. C. Sims).
- Conceptual Description of Landfarming for Sustainable Restoration of Soils Worldwide. Sixth International In Situ and On-Site Bioremediation Symposium, San Diego, CA, June 4-7, 2001. (R. Sims and J. Harmsen)
- Regulatory and Management Issues in Prepared Bed Land Treatment: Libby Groundwater Site. International Symposium for In-Situ and On-Site Bioremediation, San Diego, CA, April 19-22, 1999. [J.K.C. Nieman, R.C. Sims, and D.M. Cosgriff].
- Isolation and Characterization of Pyrene Degrading Microorganisms. American Society of Microbiology, Rocky Mountain Section, 1998. [B.A. Issa, R.C. Sims, D.L. Sorensen, J.E. McLean, J.K.C. Nieman, and H.N. Holeman].
- Effect of Redox Environment on Oxidation of Pentachlorophenol with Manganese Oxide. *HSRC/WERC Joint Conference on the Environment*, Great Plains/Rocky Mountain Hazardous Substance Research Center, U.S. Environmental Protection Agency, Albuquerque, NM, May 21-23, 1996. (R.A. Petrie, R. Sims, J.E. McLean, and P.R. Grossl)
- Phytoremediation of Lead-Contaminated Soils by Native Plants at an Abandoned Mine Site in Utah. Poster Presentation, *HSRC/WERC Joint Conference on the Environment*, Great Plains/Rocky Mountain Hazardous Substance Research Center, U.S. Environmental Protection Agency, Albuquerque, NM, May 21-23, 1996. (S.P. Klassen, J.E. McLean, P.R. Grossl, and Ronald Sims)
- Treatment of Wood Preservative-Contaminated Soils as Affected by Electron Acceptor Addition. Poster Presentation, *HSRC/WERC Joint Conference on the Environment*, Great Plains/Rocky Mountain Hazardous Substance Research Center, U.S. Environmental Protection Agency, Albuquerque, NM, May 21-23, 1996. (K.C. Nieman, R.C. Sims, R.A. Petrie, and J.L. Sims)
- A Batch Reactor for Control of Eh, pH, and Temperature of Subsurface Aqueous Systems. Poster Presentation, *HSRC/WERC Joint Conference on the Environment*, Great Plains/Rocky Mountain Hazardous Substance Research Center, U.S. Environmental Protection Agency, Albuquerque, NM, May 21-23, 1996. (R.A. Petrie, Ronald Sims, and P.R. Grossl)
- Cadmium, Copper, and Zinc Accumulation in Transgenic and Non-Transgenic Tobacco Plants. Poster Presentation, *HSRC/WERC Joint Conference on the Environment*, Great Plains/Rocky Mountain Hazardous Substance Research Center, U.S. Environmental Protection Agency, Albuquerque, NM, May 21-23, 1996. (N.A. Yancey, J.E. McLean, *, P.Kotrba, M. Mackova, T. Macek)
- Hazardous Waste Management Policy in the United States of America (USA): Prevention and Remediation. *Seoul International Waste Treatment Technology Conference and Exhibition*, Seoul, Korea, August 23-27, 1995. (* and J.L. Sims) (**Invited Speakers**)

Presentations at Nat'l/Internat'l Professional Conferences: (* indicates authorship)

- Guidance Manual for the Use of Prepared Bed Land Treatment as a Bioremedial Technology. Poster Session, *10th Annual Hazardous Waste Research Conference*, Great Plains-Rocky Mountain Hazardous Substance Research Center, U.S. Environmental Protection Agency, Manhattan, KS, May 23-24, 1995. (J.L. Sims, *, and A.L. Moss)
- Evaluation of In Situ Bioremediation Associated with Natural Attenuation at A Gas Plant Waste Site. *In Situ and On-Site Bioreclamation*, Third International Symposium, Battelle, San Diego, CA, Apr 24-27, 1995. (J.S. Ginn, *, and I.P. Murarka)
- Wood Preserving Waste-Contaminated Soil: Treatment and Toxicity. Poster Session, *In Situ and On-Site Bioreclamation*, Third International Symposium, Battelle, San Diego, CA, April 24-27, 1995. (S.G. Huling, D.F. Pope, J.E. Matthews, J.L. Sims, *, and D.L. Sorensen)
- Technology Transfer at Universities. *Rewarding Technology Transfer and Outreach at Universities: Overcoming Institutional Barriers*, Technology Transfer Meeting, U.S. EPA Hazardous Substance Research Centers, Sea Island, GA, November 20-22, 1994. (*)
(Invited Speaker)
- Bioremediation of Soils and Aquifer Materials Contaminated with Petroleum Products Containing Carcinogenic and Non-Carcinogenic Polycyclic Aromatic Hydrocarbons. *Hawai'i First National Technologies Conference: Remediation and Environmental Monitoring*, Waikiki, Hawaii, September 12-16, 1995. (*) **(Invited Speaker)**
- Interactions of Pentachlorophenol with Manganese Oxide. *9th Annual Conference on Hazardous Waste Remediation* Great Plains-Rocky Mountain Hazardous Substance Research Center, U.S. Environmental Protection Agency, Bozeman, MT, June 8-10, 1994. (A.C. Cramer, J.E. McLean, and *)
- Pentachlorophenol Interactions with Aquifer Solids. *9th Annual Conference on Hazardous Waste Remediation*, Great Plains-Rocky Mountain Hazardous Substance Research Center, U.S. Environmental Protection Agency, Bozeman, MT, June 8-10, 1994. (R. Petrie and *)
- Evaluation of Bioremediation of Creosote-Contaminated Ground Water. *Annual Groundwater Research Symposium*, Robert S. Kerr Environmental Research Laboratory, U.S.EPA, Oklahoma City, OK, June 1-3, 1994. (*, J.L. Sims, D.L. Sorensen, and M.W. Kemblowski)
- Land Treatment Unit Performance Evaluation at the Champion International Superfund Site, Libby, Montana. Poster session presented at the *Annual Groundwater Research Symposium*, Robert S. Kerr Environmental Research Laboratory, U.S.EPA, Oklahoma City, OK, June 1-13, 1994. (D.L. Sorensen, *, and J.L. Sims)
- Field Scale Evaluation of Grass-Enhanced Bioremediation of PAH Contaminated Soils. *20th Annual Risk Reduction Engineering Laboratory Research Symposium*, U.S. Environmental Protection Agency, Cincinnati, OH, April, 1994. (D.L. Sorensen, *, and X. Qiu)
- Evaluation of Biotransformation Products Associated with Manufactured Gas Plant Waste. *Special Symposium on Emerging Technologies in Hazardous Waste Management VI*, Division of Industrial and Engineering Chemistry, American Chemical Society, Atlanta, GA, September 19-21, 1994. (J.S. Ginn and *)
- Bioremediation of Contaminated Soil*. Video (41 minutes). Office of Solid Waste, U.S. Environmental Protection Agency, Washington, DC, November, 1993. (*)

Presentations at Nat'l/Internat'l Professional Conferences: (* indicates authorship)

- Chemical Mass Balance Approach for Estimating Fate and Transport of Polycyclic Aromatic Metabolites in the Subsurface Environment. *14th International Symposium on Polycyclic Aromatic Compounds*, International Society for Polycyclic Aromatic Compounds (ISPAC), Lake of the Ozarks, MO, September 8-11, 1993. (J.S. Ginn, W.J. Doucette, and *)
- Evaluation of Biotransformation Products of PAH Metabolism in a Creosote-Contaminated Aquifer. *Special Symposium on Emerging Technologies in Hazardous Waste Management V*, Division of Industrial and Engineering Chemistry, American Chemical Society, Atlanta, GA, September 27-29, 1993. (J.S. Ginn and *)
- Biotreatment: Prepared Bed and Compost Systems. *Proven and Emerging Techniques in Bioremediation*, American Society of Microbiology Workshop Program, 92nd ASM General Meeting, New Orleans, LA, May 30, 1992. (*) (Invited Speaker)
- Contaminated Site Remediation: Insights for Professionals and Managers. *Seminar on the Environment*, Environmental Research and Studies Centre, University of Alberta, Edmonton, Alberta, Canada, May 29, 1992. (*) (Invited Speaker)
- Contaminated Site Remediation and Industrial Site Decommissioning. *Conference on Industrial and Hazardous Waste Management*, The Banff Centre for Management, Banff, Alberta, Canada, April 15-19, 1993, May 10-15, 1992, May 5-11, 1991, and May 27-June 2, 1990. (*) (Invited Speaker)
- Conceptual Approach for Characterizing Problems at Hazardous Waste Sites*. Video (48 minutes). Office of Solid Waste, U.S. Environmental Protection Agency, Washington, DC, March, 1992. (*)
- Effect of Oxygen Tension on the Degradation of High Molecular-Weight Polycyclic Aromatic Hydrocarbons in Soil. *Second Annual National R & D Conference on the Control of Hazardous Materials*. Hazardous Materials Control Research Institute, San Francisco, CA, February 4-6, 1992. (H.S. Park and *)
- Mass Balance Approach for Remedy Selection at Corrective Action Sites. U.S. Environmental Protection Agency *First Annual Corrective Action Symposium*, San Francisco, CA, June 3-5, 1991. (*) (Invited Speaker)
- Habitat Conditions Affecting Bioventing Processes. *Symposium on Soil Venting*, U.S. Environmental Protection Agency, Houston, TX, April 29-May 1, 1991. (D.L. Sorensen and *) (Invited Speakers)
- In Situ Bioremediation of Dense Non Aqueous Phase Liquids (DNAPLs). U.S. Environmental Protection Agency *Workshop on DNAPLs*, Dallas, Texas, April 16-18, 1991. (*) (Invited Speaker)
- Characterization of Vadose Zone Processes as Part of Remediation Technology Evaluation and Selection at Hazardous Waste Sites. *National Meeting of the Association of Engineering Geologists*, Pittsburgh, PA, Oct. 1-5, 1990. (*) (Invited Speaker)
- Remediation Considerations for Carcinogenic Aromatic Hydrocarbon Contaminated Soil Based on Interphase Transfer and Chemical Alternation Analysis Using Integrated Chemical and Biological Assays. Poster Session. *Society of Environmental Toxicology and Chemistry (SETAC) 10th Annual Meeting*, Toronto, Canada, Nov., 1989. (C. Abbott and *)

Presentations at Nat'l/Internat'l Professional Conferences: (* indicates authorship)

- Bioremediation: Contaminated Soil. Robert S. Kerr Environmental Research Laboratory
Technical Assistance Program to U.S. EPA Region VIII: *Oily Waste- Fate, Transport, Site
Characterization, and Remediation*, Denver, CO, May 17-18, 1989. (*) (Invited Speaker)
- Evaluation of the Collector Efficiency and Impediment Modulus for Slow Rate Sand Filtration.
Intermountain American Water Works Association Annual Meeting, Sun Valley, ID,
September 21-23, 1988. (S. Hirschi and Ronald Sims)
- Status of Land Treatability Studies and Closures in the United States. *Environment Canada
Annual Meeting on Land Treatability of Oily Wastes*, Calgary Convention Centre, Calgary,
Alberta, Canada, March 22, 1988. (Ronald Sims and J.L. Sims) (Invited Speakers)
- Evaluation and Recommendations for Increasing Efficiency of the Water Treatment System for
the Town of Salmon, Idaho. *Intermountain American Water Works Association Annual
Meeting*, Park City, UT, 1987. (S. Hirschi and *)
- Background Concentrations and Fate of Organic Chemicals in Soil-Plant Systems for Risk
Assessment. *Annual Conf., American Institute of Chemical Engineers*, Boston, MA, 1986.
(*) (Invited Speaker)
- Clinoptilolite-Amended Slow Rate Sand Filtration: Performance and Economics. *Intermountain
American Water Works Association Annual Meeting*, Pocatello, ID, Sept., 1985. (D.R.
McNair and *)
- Mathematical Modeling of PAH Compounds for Use in Groundwater Protection Strategies.
Western Annual Meeting of the American Geophysical Union, Boulder, CO, July, 1986.
(B.D. Symons & *)
- Slow Rate Sand Filtration With and Without Zeolite: A Comparison of Water Treatment
Efficiency and Filtration Economics. *Intermountain American Water Works Association
Annual Meeting*, Jackson, WY, Aug. 29-31, 1984. (G.P. Foreman and *)
- Biodegradation of Polynuclear Aromatic Compounds in Soil Systems. *Agronomy Abstracts
76:36*. 1984 Annual Meeting of the American Society of Agronomy, Crop Science Society
of America, and Soil Science Society of America, Las Vegas, NV, Nov. 25-30, 1984
(Ronald C. Sims and J.L. Sims)
- Evaluation of Fill Materials for Use in the Mound System of On-site Waste Disposal. *Agronomy
Abstracts 76:36*. Annual Meeting of the American Society of Agronomy, Crop Science
Society of America, and Soil Science Society of America, Las Vegas, NV, Nov. 25-30, 1984
(J.L. Sims, R.A. Watts, and *)
- Immobilization of Polynuclear Aromatic Compounds in Soil Systems. *Agronomy Abstracts
76:31*. 1984 Annual Meeting of the American Society of Agronomy, Crop Science
Society of America, and Soil Science Society of America, Las Vegas, NV, Nov. 25-30,
1984. (R.J. Mahmood, *, and J.L. Sims)
- Protection of Groundwater by Immobilization of Hazardous Metals Associated with Industrial
Wastes in Soil Systems. *Agronomy Abstracts 76:30*. 1984 Annual Meeting of the
American Crop Society, Crop Science Society of America, and Soil Science Society of
America, Las Vegas, NV, Nov. 25-30, 1984. (J.E. McLean, *, I-fu Shen, and J.L. Sims)
- Land Treatment of Oil Shale Wastewaters. *Utah Water Pollution Control Association Annual
Meeting*, St. George, UT, 1984. (D. E. Umfleet and *)

Presentations at Nat'l/Internat'l Professional Conferences: (* indicates authorship)

- Reclamation of PAH Contaminated Soils. *1984 Annual Specialty Conference in Environmental Engineering*, American Society of Civil Engineers, Los Angeles, CA, 1984. (D.E. Umfleet, *, and A. Pano)
- In Situ Soil Treatment of Polynuclear Aromatic Compounds. *185th American Chemical Society National Meeting, Division of Environmental Chemistry*, Seattle, WA, Mar. 20-25, 1983. (*, M.R. Overcash, and C.M. Sparacino)
- Applications of Clinoptilolite in Biological Nitrification Systems. *46th Annual Water Pollution Control Federation Conference*, Cleveland, OH, 1973. (*, L.W. Little, and J.C. Brown)

Dissertation and Theses of Ronald C. Sims:

- PhD *Land Application Design Criteria for Recalcitrant and Toxic Organic Compounds in Fossil Fuel Wastes*. Department of Biological and Agricultural Engineering, North Carolina State University, Raleigh, NC, 1982. (M.R. Overcash, Major Professor)
- MS *Engineering Design for Removal of Toxic Levels of Ammonium from Dworshak National Fish Hatchery Reuse Water*. Department of Civil and Environmental Engineering, Washington State University, Pullman, WA, 1977. (E. Hindin, Major Professor)
- MS *Enhanced Nitrification by Addition of the Ion Exchange Resin, Clinoptilolite, to Tertiary Activated Sludge Units*. School of Public Health, Department of Environmental Sciences and Engineering, University of North Carolina at Chapel Hill, Chapel Hill, NC, 1972. (L.W. Little, Major Professor)

Invited Speaker:

- 2016 Algae biotechnology for wastewater treatment. 10th Annual Algae Biomass Summit, Algae Biomass Organization. 2016. Tucson, AZ, October 23-26. Ronald Sims
- 2016 Algae-based biotechnologies with cyanobacteria: wastewater remediation and public health issues. Utah Environmental Health Association. Brigham City, UT, September 21-23.
- 2016 Sustainable bioenergy from produced water. Utah Governor's Energy Development Summit. Salt Lake City, UT. May 25.
- 2015 Upflow Anaerobic Sludge Blanket (UASB) and algae system integration. Wageningen University and Research Center, April 20-24.
- 2013 Korean Society of Biotechnology and Bioengineering (KSBB). Wastewater-based algae biotechnology for nutrient recovery and bioproducts using biofilms, Seoul, South Korea
- 2013 Wastewater Remediation: Nutrient Management for Value Bioproducts using the Rotating Algae Biofilm Reactor (RABR). National Research Council, Canada, Vancouver, February 2.
- 2012 Biofuels and Renewable Chemicals from Wastewater Streams. CRIBIQ, Quebec, Canada, October 2.
2006. Biodegradation Rate of PAHs and Mineral Oil in Sediments on a Landfarm. Battelle On-Site and In Situ Bioremediation Conference, Baltimore, MD (J. Marmesen, W.. Rulkens, H. Zweers, and R.C. Sims)

Invited Speaker: (continued)

- 2006 One Model of Biological Engineering Education at a Land Grant University Based on Directed Evolution. Institute of Biological Engineering, **(R.C. Sims * T. Taylor presenting)** Arizona State U., Tucson, AZ. (T. Taylor, D. Britt, M. McConkie, P. Schreuders, and R.S. Sims)
2005. Management of Agroecosystems for Persistent Pollutants. by Ronald C. Sims at the International Workshop, Institute of Soil and Agriculture, Pulawy, Poland, March 10-12.
- 2005 Petroleum and Biofuel Oxygenates-Monitored Natural Attenuation. R. C. Sims, A. Swank, and M. Greenwood. Presented at the DOE/INRA Subsurface Science Symposium, Big Sky, Montana, Sept. 19-21.
- 2005 Biodegradation and Sorption of TBA and MTBE in Near-Surface Sediments at a Full Scale Site in Wyoming. M. Greenwood, A. Swank, J.E. McLean, and R. C. Sims. Society of Environmental Toxicology and Chemistry (SETAC), San Diego, CA, November 13-18.
- 2004 Fugacity Framework 2.0: Calculator and Training Applications for Site Assessment and Rehabilitation. Second International Conference on Prevention, Assessment, Rehabilitation and Development of Brownfield Sites. Siena, Italy. June 14-16, (R.C. Sims, J.L. Sims, M. McConkie, W.J. Grenney, and J.K Nieman).
- 2002 Field Performance” Bioremediation of PAH Contaminated Sediments. Society of Environmental Toxicology and Chemistry Annual Conference, Salt Lake City, UT, November 17-19, (R.C. Sims, J.L. Sims, and D.L. Sorensen)
- 2002 Sediment MTBE Interactions at a Full Scale Site in Montana: Natural Attenuation and Toxicity. 18th International Conference on Contaminated Soils, Sediments, and Water. University of Massachusetts, Amherst, October 21-24, , (R. C. Sims and A. Swank)
- 2002 Management Options and Environmental Sustainability for Subsurface Remediation. **Invited**. DOE/Inland Northwest Research Alliance (INRA) 2nd Annual Symposium. Boise, ID, October 13-16, [Ronald C. Sims].
- 2002 Fugacity Framework: web access and implementation for site assessment and rehabilitation. **Invited** First International Conference on Brownfield Sites Assessment, Rehabilitation, & Development. Cadiz, Spain, September 1-4, (*, J.L. Sims, S.A. Gibbons, M.R. Baugh, M. McConkie, J.K. Nieman, and W.J. Grenney).
- 2002 Soil Treatment of Chemical Industry Residues. Kazan State University, Tatarstan, Russia, July 1-5. (R.C. Sims).
- 2002 Sediment Environmental Factors Affecting Natural Attenuation/Bioremediation of MTBE at a Full-Scale Site. 12th Annual AEHS Conference, San Diego, CA, March, (A. Swank and R.C. Sims)
- 2001 Application of Microbial Toxicity Testing to MTBE Contaminated Site in Ronan, MT. 11th Annual Meeting of the Association for the Environmental Health of Soils (AEHS), San Diego, CA, March. (A. Swank and R.C. Sims)
- 1998 **Plenary Speaker**, U.S. EPA Regions 7&8 Hazardous Substance Research Center 13th Annual Meeting, May 18-21.

Invited Speaker: (continued)

1988 Bioremediation: Contaminated Aquifer Material - Ground Water. Robert S. Kerr Environmental Research Laboratory Technical Assistance Program to U.S. Environmental Protection Agency Region VIII: *Oily Waste- Fate, Transport, Site Characterization, and Remediation*, Denver, CO, May 17-18(Ronald Sims) (

International Activities:

2007-present **Invited Speaker**, Wageningen University, The Netherlands, topic: Biofuels Research at USU- Biodiesel from algae Representing Biofuels USTAR at USU

2003-2005 **Organizing Committee Member**, International Committee on Remediation for Sustainable Agro-ecosystems Workshop. with The Netherlands and Poland, **sponsored by European Union.**

2003 **PAH/Land Treatment Expert to Niznikamsk, Russia**, collaboration with Wageningen University & Alterra (The Netherlands) for Petrochemical Waste Treatment using Land Application.

1990-2005 **Co-Chair** (with drs. Joop Harmsen, The Netherlands) of the Landfarm Session of the biannual International In Situ and On-Site Bioremediation Symposium.

1990-1996 **Invited Speaker, Technical Expert, and Project Reviewer.** Ontario and Alberta, Canada. Present U.S. remediation program (RCRA and CERCLA) for soil and ground water. Review, plan, and evaluate urban remediation technologies and strategies.

1995-2000 **Invited Speaker and Technical Expert.** Perth and Sydney Australia. Member of a U.S. EPA team to develop issues and options for remediation of petroleum impacted sites with research organizations (CISRO) and national engineering firms.

2000 **Invited Speaker.** Czech Republic. Presentation: "Landfarming Framework for Sustainable Restoration of Soil." NATO Conference. Invited by U.S. EPA.

2002 **Invited Speaker and Technical Expert.** Tatarstan, Russia. Invitation and collaboration - Drs. Joop Harmsen, Wageningen University, The Netherlands. Presentations, assessment, and development of treatment alternatives for chemical industry residue assimilation in a landfarm environment. Collaborative research development with Kazan State University, Russia, and Wageningen University, The Netherlands.

2002 **Invited Speaker.** First International Conference on Brownfield Sites. Spain. Collaboration with International Brownfields Committee for international cooperation and exchange of technical information.

2002 **Invited Researcher.** Wageningen University, The Netherlands. Develop research and academic training collaboration with Wageningen University in the areas of environmental engineering technologies and remediation of soils and sediments.

Awards and Honors

Utah Governors Medal for Science and Technology
Elected to College of Fellows of the American Institute of Biomedical and Biological Engineering
Outstanding Undergraduate Research Mentor, College of Engineering, USU
Co-Advisor for Gold Medal Award for student team at the International Genetically Engineered Machine (iGEM) Competition at MIT, MA. Topic: Secretion-Based System for Microbially Produced Polyhydroxyalkanoates (Bioplastics)
Co-Advisor for Bronze Medal Award for student team at the International Genetically Engineered Machine (iGEM) Competition at MIT, MA. Topic: Biobrick Assembly for Microbially Produced Polyhydroxyalkanoates (Bioplastics)
Utah Department of Environmental Quality, Utah Water Quality Board Recognition for service to the state of Utah Water Quality Board
American Water Resources Association, Utah Chapter Recognition
Major advisor for National Winner (Kevin Hall) for Posters on the Hill (Washington, DC)
Excellence in Research recognition by Union Carbide Corporation for 5 consecutive years
Karen Morehouse U.S. EPA Best Research Paper Award (U.S. EPA)
Air & Waste Management Association Recognition (Critical Review Committee)
Recognition for Contributions as Visiting Engineer (U.S. EPA Robert S. Kerr Lab)
Outstanding Researcher Award, College of Engineering at USU
Biological Engineering Dep't Outstanding Undergraduate Research Mentor
College of Engineering Outstanding Undergraduate Research Mentor
Outstanding Researcher, USU College of Engineering
American Water Works Association Certificate of Recognition for serving as Major Advisor to 1985 National Academic Achievement Award Recipient for Outstanding Research in the Water Treatment Field
Nominee for Outstanding Dissertation, North Carolina State University
Certificate of Recognition for Leadership (as Director) of International Program in Environmental Aspects of Industrial Development, sponsored by the United Nations Industrial Development Organization (UNIDO) and the U.S. State Department
Outstanding Graduate Student, Department of Environmental Sciences and Engineering, Univ. North Carolina School of Public Health, Chapel Hill, NC
Alpha Epsilon (Agricultural Engineering Honorary Society)
Gamma Sigma Delta (Agriculture Honorary Society)
Phi Kappa Phi

Professional Service to Organizations

Northeast Biotechnology Center & Consortium (Board Member)	2014-Present
Logan City Water & Wastewater Board (Appointed by Mayor)	2008-Present
Algae Biomass Organization (ABO) 2017 Regional Planning Chair	2016-2017
Institute of Biological Engineering Regional Planning Chair	2017
Institute of Biological Engineering (President elect, President, Past Pres)	2011-2013
U.S. EPA Hazardous Substance Research Center Region 8	1990-2000
State of Utah Water Quality Board (Appointed by Governor)	1996-2007
Association of Environmental Engineering Professors	1984-2003

Instructor for U.S. Environmental Protection Agency Professional Staff: 1988-2002

- RCRA-Corrective Action-Performance-Based Management* [1999-2001]. [U.S.EPA, RCRA-Corrective Action, Washington, D.C. Office]
- Innovative Treatment Technologies for Hazardous Waste* [1998-2000]. [U.S. EPA, National Risk Management Research Laboratory, Cincinnati, OH]
- Natural Attenuation of Contaminated Soils and Ground Water* [1996-2000]. [U.S. EPA, National Risk Management Research Laboratory, Ada, OK]
- Bioremediation of Hazardous Waste Sites: Practical Approaches to Implementation* (1993, 1996) (Center for Environmental Research Information, Cincinnati, OH)
- Stabilization Technologies for RCRA Corrective Actions* (1991-1992) (Center for Environmental Research Information, Cincinnati, OH)
- Bioremediation-Basic Principles, Limitations, and Practical Applications* (1991) (Robert S. Kerr Environmental Research Laboratory, Ada, OK)
- RCRA Facility Investigation/Corrective Measures Study Training Program for Contaminated Soils and Ground Water* (1990-1991) (Office of Solid Waste, Washington, DC)
- Site Characterization for Subsurface Remediation* (1989-1990) (U.S. EPA Robert S. Kerr Environmental Research Laboratory, Ada, OK)
- Remediation of Contaminated Soil - Fundamentals and Applications* (1989-1998) (Robert S. Kerr Environmental Research Laboratory, Ada, OK, through Superfund University Training Courses (SUTI), Rice University, Houston, TX)
- Bioremediation of Contaminated Soils* (1988 - 1989) (EPA Biosystems Committee, Cincinnati, OH)
- Basic Ground Water Investigations - Vadose Zone Monitoring and Remedial Technologies* (1988-2000) (Robert S. Kerr Environmental Research Laboratory, Ada, OK, through Superfund University Training Courses (SUTI), Rice University, Houston, TX)
- Transport and Fate of Contaminants in the Subsurface - Soil Remediation and Treatment Train Approach* (1990-1993) (Robert S. Kerr Environmental Research Laboratory, Ada, OK, through Superfund University Training Courses (SUTI), Rice University, Houston, TX)

Major Advisor of Graduate Students and Graduation Date

PhD

- Igor Pererva**, Biological Engineering, Current
- Maureen Kesaano**, Biological Engineering, May 2015
- Asif Rahman**, Biological Engineering, 2015 (Co-Advisor)
- Yousef Soboh**, Biological Engineering, 2015
- Renil Anthony**, Biological Engineering, 2014
- Joshua Ellis**, Biological Engineering, 2014 (Co-Advisor)
- Daniel Dye**, Biological Engineering (Co-Advisor), 2012
- Yanna Liang**, Environmental Engineering, 2010
- Karl Nieman**, Environmental Engineering, 2008
- Jon Ginn**, Environmental Engineering, 1997

Gene Whelan, Environmental Engineering, 1992
Robert Petrie, Environmental Engineering, 1996
Carolyn Abbott, Environmental Engineering, 1993
Kapsong Park, Environmental Engineering, 1987
Hun Seak Park, Environmental Engineering, 1986
Ramzi Mahmood, Environmental Engineering, 1987

MS

Kyle Hillman, Biological Engineering, Current
Jonathan Wood, Biological Engineering, Current
Benjamin Peterson, Biological Engineering, Current
Alan Hodges, Biological Engineering, September 2016
Jason Peterson, Biological Engineering, September 2016
Zachary Fica, Biological Engineering, September 2016
Jay Barlow, Biological Engineering, incomplete
Terence Smith, Biological Engineering, All but thesis
Yessica Castro, Biological Engineering, 2014
Ashik Sathish, Biological Engineering 2014
Andrew Elder, Biological Engineering 2014
Paul Woolsey, Biological Engineering 2011
Logan Christensen, Biological Engineering, 2011
Ashton Young, Biological Engineering, 2011
Misheka Wilson, Biological Engineering, 2011
Elizabeth Linton, Biological Engineering, 2010
Karl Nieman, Environmental Engineering, 2006
Kevimn Hall, Environmental Engineering, 2003
Aaron Swank, Environmental Engineering, 2002
Mark Greenwood, Environmental Engineering, 1999
Justin Hurst, Environmental Engineering, 1995
P. Chad Ellis, Environmental Engineering, 1995
Allan Cooley, Environmental Engineering, 1994
Steven Hansen, Environmental Engineering, 1992
Mervin Coover, Environmental Engineering, 1990
Brian Symons, Environmental Engineering, 1990
John Keck, Environmental Engineering, 1989
Shane Hirschi, Environmental Engineering, 1987
Daniel McNair, Environmental Engineering, 1987
Daniel Umfleet, Environmental Engineering, 1987
James Martin, Environmental Engineering, 1986
Linda McConnell, Environmental Engineering, 1985
Gordon Forman, Environmental Engineering, 1984
Lloyd Slezak, Environmental Engineering, 1984

Consulting:

2014-present WesTech-Inc. Engineers, Salt Lake City; Oil & Gas Extraction Industry in Utah
2007-2012 Logan City Environmental Department
2005-2006 Petro-Chemical industry (Niezhnikamskneftekhim), Tartarstan, Russia
2001-2003 U.S. Army Corps of Engineers, Hazardous/Toxic Waste Management
1999-2001 HAZMED Corporation, Lanham, MD
1991-1992 City of Toronto Housing Department, Toronto, Canada
1990-1991 NUS Corporation, Washington, D.C.
1989-1999 Consultant to the U.S. Environmental Protection Agency
1989-1998 Eastern Research Group, Inc., Arlington, MA
1989-1990 PEI Associates, Inc., Cincinnati, OH
1987-1990 Peer Consultants, Dayton, OH
1987 International Technology Corp., Groundwater Division, Princeton, NJ
1986-1988 Morton Thiokol, Inc., Wasatch Division, UT
1986-1988 Remediation Technologies, Seattle, WA
1986- 2002 Dynamac Corporation, Rockville, MD and Ada, OK Office
1985 CH2M Hill, Corvallis, OR
1983-1986 Environmental Research and Technology (ERT), Inc., Fort Collins, CO
1983-1986 International Minerals and Chemical Corporation, Terre Haute, IN
1983-1986 Engineering Science, Inc., Denver, CO
1983-1990 Thunder Basin Coal Company, Wright, WY

Patents:

Methods for Harvesting and Processing Biomass. U.S. Patent Number: 20140011246 A1. Date of Patent: January, 2014. Inventors: Charles Miller, Joshua Ellis, Renil John Anthony, Ashik Sathish, and Ronald C. Sims. **Abstract:** A system and method for harvesting and processing algae: harvesting algae by mechanical or chemical system and processing harvested algae to produce biodiesel, bioplastics, biogas, or fertilizer.

Methods of Bioplastic Production. U.S. Patent Number: 20130344550 A1. Date of Patent: December 26, 2013. Inventors: Charles Miller, Asif Rahman, Ronald Sims, Ashik Sathish, and Renil Anthony. **Abstract:** A method of producing bioplastics from algae, the method including processing algae to yield an aqueous phase containing glycerol, and fermenting the aqueous phase with a bioplastic-producing bacteria to yield bioplastics. <http://www.google.com/gi/patents/US20130344550>

Methods for Producing Acetone, Butanol, and Ethanol. U.S. Patent Number: 13/663,002. Date of Patent: October 2012. Inventors: Joshua Ellis, Charles Miller, and Ronald C. Sims. **Abstract:** Acetone, butanol, and ethanol (ABE) fermentation by *Clostridium saccharoperbutylacetonicum* N1-4 using wastewater algae biomass as a carbon source.

Process for Remediating Soils Contaminated with Polycyclic Aromatic Hydrocarbons and Chlorinated Phenols. U.S. Patent Number: 6,069,292. Date of Patent: May 30, 2000. Inventors: Ishwar P. Murarka, Benjamin J. Mason, and Ronald C. Sims. **Abstract:** Photons from sunlight are utilized to pretreat contaminated soils through photooxidation of toxic chemicals that render them bioavailable to microbial transformation and detoxification.