

CURRICULUM VITAE

Katharine G. Field

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Education:

B.A., Biology, Yale University, 1975
M.A., Biology, Boston University, 1979
Ph.D., Biology, University of Oregon, 1985
Postdoctoral, 1985-1988, Indiana University.

Positions:

Co-Director, Bioresource Research Undergraduate Interdisciplinary Major, 2001-present
Associate Professor, Department of Microbiology, 2002-present
Assistant Professor, Department of Microbiology, 1995-2002
Assistant Professor (Senior Research), Departments of Microbiology and Zoology, Oregon State University, Corvallis, OR, 1988-1995
Postdoctoral Fellow, Institute for Molecular and Cellular Biology, Indiana University, Bloomington, Indiana, 1985-1988.
Visiting Assistant Professor, Earlham College, Richmond, Indiana, 1984-1985.
NIH Predoctoral Trainee in Genetics, University of Oregon, Eugene, OR, 1981-1984.
Graduate Teaching Fellow, Biology, University of Oregon, 1979-1981.
Graduate Teaching Fellow, Biology, Boston University, Boston, MA, 1977-1979.

Patent: "Source Detection of Fecal Pollution Using Host-Specific 16S rDNA Genetic Markers from Fecal Anaerobic Bacteria" (pending)

Professional Activities:

Visiting Scholar, Pacific Research Center for Marine Biomedicine, University of Hawaii, Manoa, 2005
American Academy for Microbiology Expert, 2004-present
World Health Organization Expert, 2003-present
Food Safety Research Consortium Expert, 2003-present

Journal Publications:

Walters, S. P., V. P. Gannon, and **K. G. Field**. 2006 (submitted). Detection of *Bacteroidales* fecal indicators and the zoonotic pathogens *E. coli* O157:H7, *Salmonella*, and *Campylobacter*.

Shanks, O. C., C. Nietch, M. T. Simonich, M. Younger, D. Reynolds, and **K. G. Field** 2006 (in press) A basin-wide analysis of the dynamics of fecal contamination and fecal source identification in Tillamook Bay, Oregon. *Appl. Environ. Microbiol.* 72.

Walters, S. P. and K. G. Field. 2006 (in press). Persistence and growth of fecal *Bacteroidales* assessed by bromodeoxyuridine immunocapture. *Appl. Environ. Microbiol.* 72.

Amogan, H. P., J. P. Martinez, L. M. Ciuffetti, **K. G. Field** and P. W. Reno 2006 (in press). Karyotype and genome size of *Nadelspora canceri* determined by pulsed field gel electrophoresis. *Acta Protozoologica*.

Dick, L. K. and **K. G. Field** 2005. Microplate subtractive hybridization to enrich for source-specific *Bacteroidales* fecal pollution indicators. *Appl. Environ. Microbiol.* 71: 3179-3183.

- Dick, L. K., A. E. Bernhard, T. J. Brodeur, J. W. Santo Domingo, J. M. Simpson, S. P. Walters, and **K. G. Field** 2005. Host Distributions of Uncultivated Fecal Bacteroidales Reveal Genetic Markers for Fecal Source Identification. *Appl. Environ. Microbiol.* 71: 3184-3191.
- Bernhard, A. E., D. Colbert, J. McManus, and **K. G. Field** 2005. Microbial community dynamics based on 16S rDNA profiles in a Pacific Northwest estuary and its tributaries. *FEMS Microbiol. Ecol.* 52: 115-128.
- Dick, L. K. and **K. G. Field** 2004. Rapid estimation of numbers of fecal Bacteroidetes by use of a quantitative PCR assay for 16S rRNA genes. *Appl. Environ. Microbiol.* 70: 5695-5697.
- Field, K. G.**, E. C. Chern, L. K. Dick, J. A. Fuhrman, J. F. Griffith, P. A. Holden, M. G. LaMontagne, J. Le, B. H. Olson, M. T. Simonich, 2003. A comparative study of culture-independent, library-independent genotypic methods of fecal source tracking. *J. Wat. Health* 1 (4): 181-194.
- Kim, S.-H., H. An, **K. G. Field**, C.-I. Wei, J. B. Velasquez, B. Ben-Gigirey, M. T. Morrissey, R. J. Price, and T. P. Pitta. 2003. Detection of *Morganella morganii*, a prolific histamine former, by the PCR assay using 16S rDNA targeted primers. *J. Food Protect.* 66: 1385-1392..
- Bernhard, A. E., T. Goyard, M. T. Simonich, and **K. G. Field** 2003. Application of a rapid method for identifying fecal pollution sources in a multi-use estuary. *Water Research* 37: 909-913.
- Kim, S.-H., R. J. Price, M. T. Morrissey, **K. G. Field**, C. I. Wei, and H. An. 2002. Histamine production by *Morganella morganii* in mackerel, albacore, mahi-mahi, and salmon at various storage temperatures. *J. Food Sci.* 67: 1522-1528.
- Kim, S.-H., R. J. Price, M. T. Morrissey, **K. G. Field**, C. I. Wei, and H. An. 2002. Occurrence of histamine-forming bacteria in albacore and histamine accumulation in muscle at ambient temperature. *J. Food Sci.* 67: 1515-1521.
- Kim, S.-H., **K. G. Field**, D.-S. Chang, C.-I. Wei, and H. An. 2001. Identification of bacteria crucial to histamine accumulation in Pacific Mackerel during storage. *J. Food Protect.* 64: 1556-1564.
- Kim, S.-H., **K. G. Field**, M. T. Morrissey, R. J. Price, C.-I. Wei, and H. An. 2001. Source and identification of histamine-producing bacteria from fresh and temperature-abused albacore. *J. Food Protect.* 64: 1035-1044.
- Bonnichsen, R., L. Hodges, W. Ream, D. L. Kirner, K. Selsor, R. E. Taylor, and **K. G. Field**. 2001. Methods for the study of ancient hairs: radiocarbon dates and gene sequences from individual hairs. *J. Archeological Science* 28: 777-787.
- Bernhard, A. E., and **K. G. Field**. 2000. A PCR assay to discriminate human and ruminant feces based on host differences in *Bacteroides-Prevotella* 16S ribosomal DNA. *Appl. Environ. Microbiol.* 66: 4571-4574..
- Bernhard, A. E., and **K. G. Field**. 2000. Identification of nonpoint sources of fecal pollution in coastal waters by using host-specific 16S ribosomal DNA genetic markers from fecal anaerobes. *Appl. Environ. Microbiol.* 66: 1587:1594.
- Miller, K. I., M. E. Cuff, W. F. Lang, P. Varga-Weisz, **K. G. Field** and K. E. van Holde. 1998. Sequence of the *Octopus dofleini* hemocyanin subunit: structural and evolutionary implications. *Journal of Molecular Biology* 4: 827-841.

- Field, K. G.**, D. Gordon, T. Wright, M. Rappé, E. Urbach, K. Vergin and S. J. Giovannoni. 1997. Diversity and depth-specific distribution of the SAR11 cluster rRNA genes from marine planktonic bacteria. *Appl. Environ. Microbiol.* 63: 63-70.
- Riutort, M., **K. G. Field**, J. M. Turbeville and J. Baguna. 1993. 18S rRNA sequences and phylogeny of Platyhelminthes. *Biochem. Syst. Ecol.* 21: 71-77.
- Riutort, M., **K. G. Field**, and J. Baguna. 1992. Enzyme electrophoresis, 18S rRNA sequences, and levels of phylogenetic resolution among several species of fresh-water planarians (Platyhelminthes). *Canadian Journal of Zoology* 70: 1425-1439.
- Turbeville, J. M., **K. G. Field** and R. A. Raff. 1992. Phylogenetic position of Phylum Nemertini inferred from 18S rRNA sequences: molecular data as a test of morphological character homology. *Molecular Biology and Evolution* 9: 235-249.
- Turbeville, J. M., D. M. Pfeifer, **K. G. Field**, and R. A. Raff. 1991. The phylogenetic status of arthropods, as inferred from 18S rRNA sequences. *Molecular Biology and Evolution* 8: 669-686.
- Field, K. G., S. M. Landfear and S. J. Giovannoni. 1991. 18S rRNA sequences of *Leishmania enrietti* promastigote and amastigote. *International Journal for Parasitology* 21: 483:485.
- Gutenberger, S. K., S. J. Giovannoni, **K. G. Field**, J. L. Fryer and J. S. Rohovec. 1991. A phylogenetic comparison of the 16S rRNA sequence of the fish pathogen, *Renibacterium salmoninarum*, to Gram-positive bacteria. *FEMS Microbiology Letters* 77: 151-156.
- Giovannoni, S. J., T. B. Britschgi, C. L. Moyer, and **K. G. Field**. 1990. Genetic diversity in Sargasso Sea picoplankton. *Nature* 345:60-63.
- Field, K. G., G. J. Olsen, D. L. Lane, S. J. Giovannoni, M. Ghiselin, E. C. Raff, N. R. Pace, and R. Raff. 1988. Molecular phylogeny of the animal kingdom. *Science* 239:748-753.
- Field, K. G., and J. Coddington. 1980. Rare plant species in Massachusetts. *Rhodora* 82:151-162.

Reviews, Book Chapters and Proceedings:

- Devereux, R., P. Rublee, J.H. Paul, K.G. Field and J.W. Santo Domingo. 2006 (in press). Development and Applications of Microbial Ecogenomic Indicators for Monitoring Water Quality: Report of a Workshop Assessing the State of the Science, Research Needs and Future Directions. Environmental Monitoring and Assessment.
- Till, D., **K. G. Field** and A. P. Dufour. 2004. Managing risk of waterborne zoonotic disease through water quality surveillance. In "Waterborne Zoonoses: Identification, Causes and Control", J. A. Cotruvo, A. Dufour, G. Rees, J. Bartram, R. Carr, D. O. Cliver, G. F. Craun, R. Fayer, and V. P. G. Gannon, eds. World Health Organization, IWA Publishing Alliance House, London.
- Field, K. G.** 2004. Faecal Source Identification. In "Waterborne Zoonoses: Identification, Causes and Control", J. A. Cotruvo, A. Dufour, G. Rees, J. Bartram, R. Carr, D. O. Cliver, G. F. Craun, R. Fayer, and V. P. G. Gannon, eds. World Health Organization, IWA Publishing Alliance House, London.
- Field, K. G.**, A. E. Bernhard, and T. J. Brodeur. 2003. Molecular approaches to microbiological monitoring: Fecal source detection. Proceedings of the EMAP Symposium 2001: Coastal Monitoring Through Partnerships. *Environ. Monitor. Assess.* 81: 313-326. Also on web: <http://www.kluweronline.com/issn/0167-6369>.

- Field, K. G.** 2002. Fecal Source Tracking with *Bacteroides*. Proceedings of the U.S. EPA Workshop on Microbial Source Tracking, Irvine, CA.
- Field, K. G.,** A. E. Bernhard, T. J. Brodeur, L. K. Dick, M. Simonich, T. E. Jones, Jr., and C. Bracken. 2002. Who's Responsible: Fecal Source Tracking with *Bacteroides*. Proceedings of the Research and Extension Water Quality Conference 2002, Vancouver, WA.
- Field, K. G.** and A. E. Bernhard. 2001. Molecular detection of *Bacteroides* as source indicators of fecal pollution in water. Proceedings American Water Research Association Spring Specialty Conference. J. J. Warwick, ed. San Antonio.
- Giovannoni, S. J., M. S. Rappé, D. Gordon, E. Urbach, M. Suzuki and **K. G. Field**. 1996 . Ribosomal RNA and the evolution of bacterial diversity. In "Evolution of Microbial Life", ed. D. M. Roberts, P. Sharp, G. Alderson and M. Collins. Society for General Microbiology Symposium Volume, Cambridge University Press, Great Britain.
- Giovannoni, S. J., T. Mullins, and **K. G. Field**. 1995. Microbial diversity in marine systems: rRNA approaches to the study of unculturable microbes. In: "Molecular Ecology of Aquatic Microbes," ed. Ian Joint, Springer-Verlag, Berlin-Heidelberg-New York-Tokyo.
- Raff, R. A., **K. G. Field**, G. J. Olsen, S. J. Giovannoni, M. T. Ghiselin, D. J. Lane, N. R. Pace, and E. C. Raff. 1989. The phylogeny of the animal kingdom: a molecular approach. In B. Fernholm (ed.) The Hierarchy of Life. 70th Nobel Symposium, Sweden. Elsevier.
- Lane, D. J., **K. G. Field**, G. J. Olsen, and N. R. Pace. 1988. Reverse transcriptase sequencing of rRNA for phylogenetic analyses. *Methods in Enzymol.* 167:138-144.
- Raff, R. A., **K. G. Field**, M. T. Ghiselin, D. J. Lane, G. J. Olsen, A. L. Parks, B. A. Parr, N. R. Pace, and E. C. Raff. 1988. Molecular analysis of distant phylogenetic relationships in echinoderms. In C. R. C. Paul and A. B. Smith (eds.) Echinoderm Phylogeny and Evolutionary Biology. Oxford Univ. Press.
- Raff, R. A., J. A. Anstrom, J. E. Chin, **K. G. Field**, M. T. Ghiselin, D. J. Lane, G. J. Olsen, N. R. Pace, A. L. Parks, and E. C. Raff. 1987. Molecular and developmental correlates of macroevolution. In R. A. Raff and E. C. Raff (eds.) Development as an Evolutionary Process. A. R. Liss, N. Y. pp. 109-138.

Textbooks:

- Ream, W., B. Geller, J. Trempy, and **K. G. Field**. 2003. *Molecular Microbiology Laboratory: A Writing-Intensive Course*. Academic Press, San Diego. 268 pp. Co-wrote and edited the manuscript.
- Ream, W., and **K. G. Field**. 1998. *Molecular Biology Techniques: An Intensive Laboratory Course*. Academic Press, San Diego, 227 pp. Co-wrote and edited the manuscript.

Technical Notes and Reports:

- Field, K. G. 2006. Microbial Source Tracking: Its Utility and Limitations Toward the Protection of Recreational Waters in the Great Lakes Basin. US-Canada International Joint Commission Science Advisory Board.
- Field, K. G. 1989. AMV reverse transcriptase sequencing of ribosomal RNAs. *Promega Notes* 22.

Recent Abstracts and Invited Presentations:

- Petersen CA, Walters SP, **Field KG** 2006. Analysis of *Bacteroidales* 16S rRNA Gene Sequences from a Geographically Isolated Human Population. American Society for Microbiology General Meeting, Orlando.
- Field, K. G.**, Shanks, O. C., C. Nietch, M. T. Simonich, D. Reynolds. 2006. Tracking Fecal Contamination with *Bacteroidales* Molecular Markers: An Analysis of the Dynamics of Fecal Contamination in the Tillamook Basin, Oregon. American Society for Microbiology General Meeting, Orlando.
- Walters, S. P., Shanks, O., Nietch, C., Gannon, V.P.J., and **Field, K. G.** 2006. Dynamics of aquatic fecal contamination, fecal source identification, and correlation of *Bacteroidales* host-specific marker detection with fecal pathogens. Symposium on Urban Oceans, American Society for Limnology and Oceanography, Honolulu.
- Field, K. G.** 2005. Clean Water: Molecular Approaches to Identifying the Source of Fecal Contamination and Tracking Pathogens. Invited speaker, Environmental Engineering, University of California, Berkeley.
- Field, K. G.** 2005. Who's responsible? Identifying the source of fecal contamination in water with molecular markers. Invited speaker, Oregon Sea Grant Program Assessment, Corvallis.
- Walters, S. P., **K. G. Field**, V. P. J. Gannon, T. A. Graham, A. Muckle, J. Thomas, and J. Byrne. 2005. Correlation of *Bacteroidales* General and Host-Specific PCR Markers with the Presence of Pathogenic *Salmonella* spp. and *Escherichia coli* O157:H7. American Society for Microbiology General Meeting, Atlanta.
- Field, K. G.** 2005. Who's responsible? Identifying the source of fecal contamination in water with molecular markers. Invited speaker, Oregon Environmental Laboratory Association Annual Meeting, Eugene.
- Field, K. G.** 2005. Who's responsible? Identifying the source of fecal contamination in water with molecular markers. Invited seminar, Hatfield Marine Science Center.
- Field, K. G.** 2005. New Developments in Fecal Source Identification with Bacteroidetes Molecular Markers. Invited speaker and workshop participant, Workshop on Contaminant Source Identification in Water and Wastewater, Water Environment Research Foundation (WERF), San Antonio.
- Field, K. G.**, Dick, L. K., Walters, S, and Petersen, C. 2005. New Developments in Fecal Source Identification with Bacteroidetes Molecular Markers. Invited speaker, Symposium on Urban Oceans, American Society for Limnology and Oceanography, Salt Lake City.
- Field, K. G.** 2005. Fecal Source Identification: with Bacteroidales molecular markers. Invited speaker, Pacific Research Center for Marine Biomedicine, University of Hawaii, Manoa.
- Field, K. G.** 2004. Fecal Source Identification with Bacteroidetes Molecular Markers. Invited speaker, National Beaches Conference, US Environmental Protection Agency, San Diego.
- Field, K. G.** 2004. Use of DNA techniques to differentiate sources of fecal contamination. Invited Speaker, National Council for Air and Stream Improvement West Coast Regional Meeting, Portland.

- Walters, S. P., and **K. G. Field**, 2004. Bromodeoxyuridine Immunocapture to Assess Survival of Bacteroidetes Host-Specific Fecal Markers and Fecal Indicator Bacteria. American Society for Microbiology General Meeting, New Orleans.
- Field, K. G.** 2004. Discriminating the source of fecal contamination with PCR markers from Bacteroidetes. Invited speaker and participant, Symposium on Urban Oceans, American Society for Limnology and Oceanography, Honolulu.
- Walters, S. P., and **K. G. Field**, 2004. Cultivation independent assessment of metabolic activity and persistence of host-specific Bacteroidetes fecal markers. Invited speaker and participant, Symposium on Urban Oceans, American Society for Limnology and Oceanography, Honolulu.
- Field, K. G.** 2004. Human and Animal Pathogens in the Environment. Invited speaker/participant, American Academy of Microbiology Workshop "From Outside to Inside: Environmental Microorganisms as Human Pathogens", Portland.
- Field, K. G.** 2004. Discriminating the source of fecal contamination with PCR markers from Bacteroidetes. Invited speaker and participant, International Workshop on Methods of Tracing Sources of Fecal Contamination, Department of the Environment and European Union, Guildford, England, 2004
- Field, K. G.** 2003. Source tracking to identify animal sources of bacteria contaminating water/environment. Invited speaker, Food Safety Research Consortium Food Attribution Workshop, Atlanta.
- Field, K. G.** 2003. Fecal Source Tracking: Distinguishing Human and Animal Fecal Contamination. Invited Speaker, Emerging Pathogens: Zoonoses. WHO/EPA Conference, Annapolis, MD.
- Barrow, B., M. Simonich, and **K. G. Field**, 2003. Prevalence of *tetQ* in Wild Animals. American Society for Microbiology General Meeting, Washington, DC.
- Dick, L. K. M. T. Simonich and **K. G. Field**, 2003. Microplate subtractive hybridization to identify host species-specific PCR primers for fecal source tracking. American Society for Microbiology General Meeting, Washington, DC.
- Field, K. G.**, M. T. Simonich, L. K. Dick and D. Reynolds. 2003. Detecting the Source of Fecal Pollution in the Tillamook Watershed with a New Molecular Method. Invited presentation, USDA-CSREES National Water Quality Coordinators Conference, Tucson.
- Field, K. G.** 2002. Detecting fecal pollution in Tillamook Bay. Invited speaker, Tillamook Estuary Project "State of the Bay", 2002.
- Field, K. G.** 2002. Molecular detection of fecal *Bacteroides* as source indicators for fecal pollution in water. Invited speaker, Division Q Symposium, American Society for Microbiology General Meeting, Salt Lake City.
- Field, K. G.**, A. E. Bernhard, M. T. Simonich and L. K. Dick. 2002. Molecular approaches to bacterial source tracking in water. Invited presenter, U.S. EPA Science Forum 2002, Washington, D. C.
- Field, K. G.**, A. E. Bernhard, M. T. Simonich and L. K. Dick. 2002. Molecular indicators of microbial water quality. U. S. Environmental Protection Agency Workshop on Microbial Genomic Indicators, Kansas City, May 2002.

- Field, K. G.** 2002. Fecal Source Tracking with *Bacteroides*. Molecular approaches to fecal source tracking in water. Invited speaker, Pacific Rim Shellfish Conference, Silverdale, Washington.
- Field, K. G.** 2002. Fecal Source Tracking with *Bacteroides*. Invited speaker, U.S. EPA Workshop on Microbial Source Tracking, Irvine, CA.
- Field, K. G.** 2002. Molecular approaches to bacterial source tracking in water. Invited speaker, Oregon Graduate Institute School of Science & Engineering, Oregon Health & Science University, Beaverton, OR.
- Field, K. G.**, T. J. Brodeur, L. K. Dick, T. E. Jones, Jr., and C. Bracken. Who's Responsible: Fecal Source Tracking with *Bacteroides*. Research and Extension Regional Water Quality Conference 2002, Vancouver, Washington.
- Field, K. G.** 2001. Molecular detection of fecal *Bacteroides* as source indicators for fecal pollution in water. 16th International Congress of the Estuarine Research Foundation, St. Pete's Beach, FL.
- Field, K. G.** 2001. Molecular detection of fecal *Bacteroides* as source indicators for fecal pollution in water. Keynote Speaker. Fifth International Conference on Shellfish Restoration (ICSR '01), Nanaimo, BC, Canada.
- Field, K. G.**, and A. E. Bernhard. 2001. Molecular detection of fecal *Bacteroides* as source indicators for fecal pollution in water. Ninth International Symposium on Microbial Ecology, Amsterdam, The Netherlands.
- Field, K. G.** and T. J. Brodeur. 2001. Molecular detection of fecal *Bacteroides* for fecal source tracking. Invited presentation. Interstate Shellfish Sanitation Conference, Norfolk, VA.
- Field, K. G.** 2001. Molecular Detection of Anaerobic Bacteria as Source Indicators for Fecal Pollution in Water. Invited presentation. American Water Resources Spring Specialty Conference, San Antonio.
- Field, K. G.**, A. E. Bernhard and T. J. Brodeur. 2001. Molecular approaches to microbiological monitoring. Invited presentation. US EPA EMAP Symposium 2001, Pensacola Beach, FL.
- Bernhard, A. E., T. Goyard, and **K. G. Field**. 2000. Source Identification of Fecal Pollution in Coastal Waters Using *Bacteroides/Prevotella* Host-specific Genetic Markers. American Society for Microbiology General Meeting, Los Angeles.
- Mintie, A., A. E. Bernhard, and **K. G. Field**. 2000. Phylogenetic Diversity of *Bacteroides/Prevotella* 16S rRNA Genes from Cow and Human Feces. American Society for Microbiology General Meeting, Los Angeles.
- Field, K. G.** 2000. Molecular detection of anaerobic bacteria as indicator species for fecal pollution in water. Invited speaker, Ecosystems Indicators STAR Grants Progress Review Meetings, U. S. Environmental Protection Agency, Las Vegas, Nevada.
- Field, K. G.** 1999. Who's responsible? Molecular detection of the sources of fecal pollution. Invited seminar speaker, University of Oregon, Eugene.
- Bernhard, A. E. and **K. G. Field**. 1999. Microbial diversity and community structure in a Pacific Northwest estuary. 15th International Congress of the Estuarine Research Foundation, New Orleans.

- Bernhard, A. E., and **K. G. Field**. 1999. Microbial diversity and community structure in a Pacific Northwest estuary. American Society for Microbiology General Meeting, Chicago.
- Field, K. G.** 1999. Ancient DNA and peopling of the Americas. Invited seminar, Lane Community College, Eugene, OR.
- Bernhard, A. E., and **K. G. Field**. 1998. Genetic markers from anaerobic bacteria used to discriminate human and cattle fecal contamination without culturing indicator organisms. Pacific Estuarine Research Foundation Annual Meeting, Tillamook, OR.
- Bernhard, A. E., and **K. G. Field**. 1998. Genetic markers from anaerobic bacteria used to discriminate human and cattle fecal contamination without culturing indicator organisms. American Society for Microbiology General Meeting, Atlanta.
- Field, K. G.** 1998. Keynote speaker, M. J. Murdock Charitable Trust Partners in Science Colloquium, Vancouver, WA.
- Bonnichsen, R., **K. G. Field**, and W. Ream. 1998. Genetic diversity and archeological evidence. Invited symposium speaker: "The First Americans: A New Perspective". 150th Anniversary celebration of AAAS Founding, Philadelphia.
- Field, K. G.**, W. Ream and R. Bonnichsen. 1997. Analysis of hairs from prehistoric settlements: long term associations between humans and dogs. Invited speaker, 58th Annual Biology Colloquium, Oregon State University. Coorganized the 58th biology colloquium.
- Bonnichsen, R., **K. G. Field**, W. Ream, E. Taylor, and K. Rendich. 1994. New techniques for recovering and analyzing ancient human and animal hair. Canadian Archeological Association.
- Field, K. G.** 1994. Genetic diversity and depth-specific speciation in the SAR11 cluster, Sargasso Sea bacterioplankton. Society for the Study of Evolution Meeting, Athens, Georgia. Session chair.
- Field, K. G.** 1994. Genetic diversity and depth-specific speciation in the SAR11 cluster, Sargasso Sea bacterioplankton. Invited speaker, Center for Gene Research and Biotechnology Annual Retreat, Molecular Diversity Session, Hatfield Marine Science Center.
- Rappé, M., K. Vergin, **K. Field**, D. Gordon, P. Kemp, and S. Giovannoni. 1994. Genetic analyses of bacterioplankton and phytoplankton plastids in surface seawater from Cape Hatteras. Ocean Margins Program Meeting, Woods Hole Oceanographic Institution, Woods Hole, MA.

Research_Grants:

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| 2007-2012 | NSF: Waterborne Pathogens: Ecology, Evolution, and Environment. IGERT. \$3,000,000 (pending). |
| 2006-2008 | Oregon Sea Grant: Targeted Metagenomics for Fecal Source Tracking. \$205,822 (declined). |
| 2006-2008 | Oregon Sea Grant: Health Risks to Surfers From Exposure to Marine Waters in Oregon (with PI's Anna Harding and Kathy Neumann). \$194,913 (declined). |
| 2005-2008 | NOAA: Fecal Source Identification and Human Health Risks. \$682,339 (declined) |
| 2002-2006 | Oregon Sea Grant: Testing Fecal Source Discrimination in water using molecular markers from <i>Bacteroides</i> . \$288,280. |

- 2002-2005 U.S. EPA: Novel Antibiotic-Resistant Bacteria Formed in the Environment as a Result of Fecal Pollution." \$207,483.
- 2001 OSU Research Equipment Reserves Fund. Funds to replace Sorvall floor centrifuge and acquire plate spinner. \$11,382.
- 2001-2002 Oregon Department of Environmental Quality, Section 319. Bacteriological Characterization of Direct Bay Tributary Streams in the Coos Estuary, Coos County, OR. \$31,816 (subcontract with Coos Watershed Association).
- 2000-2003 USDA CSREES: Detecting the Source of Fecal Pollution in the Tillamook Watershed with a New Molecular Method. \$315,000.
- 2001 URISC Research Office Sponsored Undergraduate Researcher "Antibiotic Resistance Transfer in Oysters as a Result of Fecal Pollution". \$800 to Rebecca Cooper.
- 2000 URISC Research Office Sponsored Undergraduate Researcher "Potential Antibiotic Resistance Transfer in Oysters as a Result of Fecal Pollution". \$2,963 to Rebecca Cooper.
- 1999-2000 Research Equipment Reserves. Funds to purchase an anaerobic chamber. \$8,722.
- 1999-2001 U.S. EPA: Molecular Detection of Anaerobic Bacteria as Indicator Species for Fecal Pollution in Water. \$278,830.
- 1998 Research Experience for Undergraduates: "Distinguishing the Sources of Fecal Pollution with Species-Specific Bacteroides/Prevotella 16S rDNA Probes"; \$3,000 to Amanda Barry. OSU Research Office.
- 1998-2002 Oregon Sea Grant: "Biotechnological Methods to Distinguish the Sources of Fecal Pollution in Estuarine Waters"; \$340,797
- 1997-1998 Research Council, Oregon State University: "Distinguishing the Sources of Fecal Pollution with Species-Specific Bacteroides/Prevotella 16S rDNA Probes"; \$7,907
- 1996-2000 The Bingham Trust: "A Molecular Archeology Program" (\$500,000) (to Robsen Bonnicksen, Center for the Study of the First Americans)
- 1999-2002 M. J. Murdock Charitable Trust Exceptional Opportunity Grant: "Molecular Analysis of Ancient DNA from Pleistocene Human Hair"; \$47,800
- 1994 Research Council, Oregon State University: "Genetic Analysis of Ancient Human Hairs recovered from Pleistocene Archeological Samples"; \$6,000.
- 1999 Medical Research Foundation: "Analysis of the Small Subunit Ribosomal RNA Gene in the Tapeworm (Cestoda, Platyhelminthes)", \$15,175.
- 1989-1991 National Science Foundation Grant: "Metazoan Phylogeny by Ribosomal DNA Sequencing," \$217,744. Co-PI with Rudy Raff, Indiana University; sequenced and analyzed approximately two-thirds of the organisms in the study and wrote one of the papers that resulted.

Educational Grants:

2004-2009 (pending) USDA CSREES: "Diversity Achievement in Agricultural and Natural Resources: a Multicultural Scholars Program" (co-PIs Sherri Willard Argyres, Student Advancement Office, College of Agriculture; Anita Azarenko and Wanda Crannell, Bioresource Research); \$100,000.

Honors and Awards:

2005 Visiting Scholar, Pacific Research Center for Marine Biomedicine
2000 Finalist, Fred H. Horne Award for Excellence in Teaching
1997 L. L. Stewart Faculty Development Award
1996 M. J. Murdock Charitable Trust Exceptional Opportunity Grant

Awards to trainees:

2004-2005 URISC Fellowship to Jill Brunner
2004 URISC Fellowship to Melissa Younger
2003 Oregon Sea Grant tuition fellowship to Linda Dick
2003-2006 Eckleman Foundation Graduate Fellowship to Sarah Walters
2002-2003 URISC Fellowship to Breanne Barrow
2001 URISC Research Fellowship to Rebecca Cooper
2000 URISC Research Fellowship to Rebecca Cooper
2000 Finalist, The Savery Outstanding Graduate Student Award, Anne E. Bernhard
2000 College of Agricultural Sciences Registry of Distinguished Students, Anne E. Bernhard
1999 American Society for Microbiology Student Travel award, Anne E. Bernhard
1998 URISC Research Fellowship to Amanda Barry
1998 American Society for Microbiology Student Travel award, Anne E. Bernhard
1998 P. F. Yerex and Nellie Buck Yerex Graduate Fellowship to Anne E. Bernhard
1996 Carl S. Schumaker Award for Students in Marine Science to Anne E. Bernhard

Professional Service:

USDA, Water and Watersheds, Panelist, 2006
Councilor, Division R, American Society for Microbiology, 2000-present.
Water Environmental Research Foundation workshop on Fecal Source Identification and Environmental Policy, San Antonio, 2005.
American Academy of Microbiology Workshop "From Outside to Inside: Environmental Microorganisms as Human Pathogens", Portland, 2004.
International Workshop on Methods of Tracing Sources of Fecal Contamination, Department of the Environment and European Union, Guildford, England, 2004.
Food Safety Research Consortium Food Attribution Workshop, Atlanta, 2003.
World Health Organization Emerging Pathogens in Water: Zoonoses. WHO/EPA Conference, Annapolis, MD, 2003
U. S. Environmental Protection Agency Workshop on Microbial Genomic Indicators, Kansas City, May 2002.
U.S. Environmental Protection Agency: Environmental Indicators in the Estuarine Environment Research Program. July 2000.
Scientific Council, Center for the Study of the First Americans, 1997-2003.
Co-host, Microbiology School, Microbiology Literacy Initiative, October 23-24, 1997. Planned and hosted a 2-day laboratory educational experience in microbiology for the producers of an ASM/NSF 4-part educational TV program on Microbiology.

Editorial Boards:

Applied and Environmental Microbiology

Ad Hoc Reviews:

Journals: Science, Proceedings of the National Academy of Sciences USA, Applied and Environmental Microbiology, Microbial Ecology, Molecular Ecology, Molecular Biology and Evolution, Molecular Phylogeny, Marine Biology, Gene, Molecular Phylogenetics and Evolution, Environmental Monitoring and Assessment, ASCE Journal of Environmental Engineering, Journal of Field Archeology, Evolution and Development

Granting and Government Agencies: National Science Foundation (Systematics, Population Genetics), Environmental Protection Agency, US Department of Agriculture, Minnesota Sea Grant, Department of Energy, National Nuclear Security Administration Chemical and Biological National Security Program, California Sea Grant, Maine Sea Grant, M. J. Murdock Charitable Trust, British Biotechnology and Biological Sciences Research Council, Cooperative Institute for Coastal and Estuarine Environmental Technology

Professional Societies:

American Society for Microbiology
American Association for the Advancement of Science
Society for the Study of Evolution
Society for Molecular Biology and Evolution

University Service:

Co-Director, Bioresource Research Undergraduate Interdisciplinary Major, 2001-present
Microbiology Department Chair Search Committee, 2004.
Committee on Academic Standing, 1996-2003
President's Commission on the Status of Women, 1996-1999
Faculty Senate, 1997-1999.
Co-organizer, University Biology Colloquium, 1996-1997
University Special Services Committee, 1995-1996
Faculty Adviser for Corvallis Karate Club

Departmental Service:

Chair, Pernot equipment fund committee, 2004-2005
Space Committee, 2001-present
Graduate Committee, Department of Microbiology, 1995-2005
Undergraduate Curriculum Committee, Department of Microbiology, 1996-1998, 2005-present
Biotechnology Option Committee, Biology Program, 1997
Co-organizer, Microbiology Research Retreat, 1995.
Outreach Committee, Molecular and Cellular Biology Program, 1995-96
Admissions Committee, Molecular and Cellular Biology Program, 1996-1999

Community Service:

Scientific Advisory Board, Hawaii/Oregon Sea Grant Program to Develop a Marine Biotechnology Curriculum for High Schools, 2004-present
Mentor, ASM Minority Mentoring Program, 2005-present Science/Microbiology representative to Scientist-Educator Partnerships Program to assist public Schools (SEPPS); classroom presentations, serve as an "e-mail pal" and an "Ask-A-Scientist Oracle".
Lecturer, Corvallis High School AP Biology; Crescent Valley High School Biology
Numerous public lectures such as at Tillamook Bay State of the Bay Series and Hanauma Bay, Hawaii, Science Night

Teaching:

Bioresource Research: I co-direct this interdisciplinary undergraduate program that allows students to acquire two years of research experience and broad-based knowledge in interdisciplinary fields. I oversee and co-teach courses on scientific writing, ethics, and data presentation, advise students, help them find faculty mentors, and serve on their thesis committees.

Great Experiments in Bioresource Science: (BRR100/407), 2001-present. Co-teach. 20 students.
This course introduces undergraduate freshman Bioresource Research majors to research through a series of professional research seminars, as well as discussion, writing, and introduction to library research. Freshmen are paired with upper class students for mentoring. These students go on to do two years of research, culminating in a thesis and seminar.

Disease and Society (MB330), 2002-present. Co-taught, 2002-2004. Teach, 2005- 45 students.
Along with Dr. Dan Rockey, I developed this course on the differential occurrence and outcome of microbial disease according to social inequality, to fulfill the DPD (Difference, Power and Discrimination) Baccalaureate Core requirement for undergraduates, while also having a legitimate science course content. Course also covers ethics for microbiologists and scientists, with a public health perspective. The course was so popular after one year that the enrollment was capped.

General Microbiology (MB 302), 1997, 1999-present. 160+ students.
Introduction to general microbiology. This course is taught four times a year. I teach it fall term, and my section is so popular that the enrollment was capped.

Methods in Molecular Biology (MCB525, 3-credit graduate intensive course), 1992-2001.
Intensive Molecular Biology Laboratory: I developed, along with Dr. Walt Ream, a lab manual and set up a new teaching facility in 1992. This course is very well received and applications for each section are about twice the 24 positions available. Contact hours for this two-week course are equivalent to a full term of a 3 credit course. The course, designed for first year PhD students, also serves technicians, postdoctoral fellows, and faculty from OSU and other institutions worldwide. The manual that we wrote for this course was published by Academic Press in 1998 and is now in use at a number of universities. Walt and I retired from this course in 2002.

Eukaryotic Microbiology (MB460X/560X), 1998. 24+ students.
Developed to serve the needs of students in microbiology, botany, zoology, forestry, oceanography, and environmental engineering. Uses an evolutionary framework to introduce biochemical pathways, structural and nutritional diversity, reproductive and life history strategies, including pathogenesis and symbiosis, of eukaryotic microbes. Because I was asked to teach sections of General Microbiology, it has not been offered since 1998.

Scientific Skills and Ethics (MCB607), co-developed and co-taught, 1995, 1997, 1999. 12 students.
Drs. Courtney Campbell and Kathy Moore (Philosophy) and Dr. Frank Moore (Zoology) and I developed this course to meet NIH requirements for formal training in ethics, as well as providing practical training in academic skills such as scientific writing and publication and proposal writing. I taught a unit on scientific writing. We retired from the course in 1999.

Molecular Microbiology Laboratory (MB 307), co-taught, 1996, 1997. 48 students.
I reorganized and rewrote the laboratory manual for this writing-intensive laboratory course. The manual has been updated by Walt Ream and published by Academic Press in 2002.

Virology (MB 434/534), 1989.

Graduate Seminars Taught: Molecular Evolution, Origins of Life

Guest Lectures: Molecular Evolution of Cells and Organelles (MB668), Selected Topics in Microbial Ecology (MB666), Molecular Evolution and Ecology (MB564), Molecular and Cellular Biology (MCB511), General Parasitology (MB480/580X), Plasmid Biology (MB456/556).

Outside Courses: Microbial Ecology, University of Oregon; Marine Microbial Ecology, Bermuda Biological Station for Research; Molecular Probes in Marine Ecology, Marine Biological Laboratories Summer Course, Woods Hole; Molecular Evolution, Marine Biological Laboratories Workshop Course, Woods Hole.

Postdoctoral Research Associates:

Michael Simonich 2001-2003
 Orin Shanks 2003-2004

Graduate Students:

As major professor:

Anne Bernhard	1996-2000	Microbiology (Ph.D.) Postdoctoral fellow, David Stahl, University of Washington, 2000-2004. Assistant Professor, Connecticut College, 2004-
Linda Dick	2001-2004	Microbiology (M.S/Ph.D.). Postdoctoral fellow, Ohio State University, 2004-
Sarah Walters	2001-	Microbiology (Ph.D.)
Carolyn Petersen	2004-	Microbiology MS.

As co-adviser:

Weerathep Prongprasert	1997-2000	Entomology (Ph.D.) Assistant Professor, Thailand
Harold Amogan	1998-2004	Microbiology (M.S.)
Tom Jones	2000-2003	Public Health (M.S.)..
Caragwen Bracken	2000-2003	Public Health (Ph.D.) Postdoctoral fellow, US EPA, Athens, GA.

As committee member: Served on the graduate committee of 19 students in Microbiology, Genetics, Bioresource Engineering, Oceanography, Public Health, Soils Science, Botany, and Molecular and Cellular Biology. Served as Graduate Representative on the committees of 7 students in Molecular and Cellular Biology, Anthropology, Forest Science, and Horticulture.

Laboratory Rotations: Nine graduate students did rotations in my laboratory.

Recent Undergraduates:

Laboratory projects:

Katrina Murphy	2005	Bioengineering
Rahwa Gebreab	2005	Microbiology
Micah Walter	2004-2005	Pharmacy
Jill Brunner	2004-2005	Microbiology, International Program. URISC Fellowship.
Kristen Thing	2002-2003	Biology. Forensics graduate student.
Breanne Barrow	2002-2003	Microbiology (URISC Fellowship)
Melissa Younger	2001-2004	Microbiology. Pharmacy student.
Michael Acevedo	2000-2001	Biology
Becky Cooper	2000-2001	Bioresource Research (two URISC fellowships)
Diana Buccaforni	2000-2001	Honors College
Thierry Goyard	1999-2000	Microbiology
Donna Trippett	1999	Microbiology
Amanda Barry	1998	Biochemistry and Bioresource Research (URISC Fellowship). Graduate Student, Michigan State University Institute for Microbial Ecology
David Howard	1999	Microbiology
Nathan Guzman,	1998-1999	Food Science and Technology

Mitch Clarke	1997	Microbiology
Michael Lonie	1996-1998	Microbiology
Belinda Sly	1995-1996	Zoology. Graduate student, Indiana University

Undergraduate Honors Committees Served on the committees of two Honors College students

International Degree Program adviser: Acted as advisor to two International Degree Program students

Postbaccalaureate Students:

Linda Dick	2001	Microbiology
Kristine Gerbus	2001	Microbiology
Kamontip Phusitkittikhon	2004-	Microbiology

Visiting Scholars:

Marta Riutort, University of Barcelona, Spain, 1990-1991.
Michael Pester, International Fulbright Student, University of Constanz, 2001.
Lui Quing, M.D., Ph.D., Urumqi, Xinjiang, People's Republic of China, 2001-2002.