Jo Handelsman
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EDUCATION

Institution	Major	Degree	Year
Cornell University	Agronomy	B.S.	1979
University of Wisconsin-Madison	Molecular Biology	Ph.D.	1984

APPOINTMENTS

2017-Present	Director, Wisconsin Institute for Discovery, University of Wisconsin
2017-Present	Professor, Department of Plant Pathology, University of Wisconsin
2017-Present	Vilas Research Professor
2014-2017	Associate Director for Science, The White House Office of Science and Technology Policy
2010-2017	Professor, Department of Molecular, Cellular and Developmental Biology, Yale University
2012-2014	Series Editor, "Entering Mentoring"
2010-2013	Director, The Center for Scientific Teaching at Yale
2007-2009	Professor and Chair, Department of Bacteriology, University of Wisconsin
2007-2011	Editor-in-Chief, *DNA and Cell Biology*
2004-2014	Co-Chair (with Bill Wood, University of Colorado), National Academies Summer Institute on Undergraduate Education in Biology
2003-2014	Series Editor, "Controversies in Science and Technology"
2002-Present	Howard Hughes Medical Institute Professor
2002-2010	Director, Wisconsin Program for Scientific Teaching
2005-2008	Editor, *Applied and Environmental Microbiology*
2005-2008	Editor, *Cell Biology Education*
2001-2007	Co-Director (and Co-Founder with Molly Carnes), Women in Science and Engineering Leadership Institute (WISELI)
1997-1999	Director, Institute for Pest and Pathogen Management, University of Wisconsin
1995-2007	Professor, Department of Plant Pathology, University of Wisconsin
1991-1995	Associate Professor, Department of Plant Pathology, University of Wisconsin
1985-1991	Assistant Professor, Department of Plant Pathology, University of Wisconsin
1984-1985	Postdoctoral Fellow, Department of Plant Pathology, University of Wisconsin

RESEARCH INTERESTS

The goal of the Handelsman lab's research is to understand the structure and function of microbial communities and the signals that govern them through the application of metagenomics, genetics, and small molecule chemistry. Areas of emphasis include biochemistry and genetic regulation of antibiotic production, microbial diversity, antibiotic resistance, and symbioses in communities in soil, on plant roots, and in the human gut. The lab developed a three-species model community to study the nature of community robustness, invasion processes, and emergent properties of microbial communities.

AWARDS AND HONORS

2019 Inducted into the American Academy of Arts and Sciences
2018 Honorary Doctor of Science, University of Waterloo
2017 Honorary Doctor of Science, Wesleyan University
2017 Vilas Research Professor, University of Wisconsin-Madison
2015 Outstanding Author Contribution Award, Emerald Group Publishing
2013 Honorary Doctor of Science, Bard College
2013 American Society for Microbiology Graduate Microbiology Teaching Award
2012 Named one of the "Ten People Who Mattered this Year" by Nature
2012 Connecticut Academy of Science and Engineering
2011 Presidential Award for Excellence in Science, Mathematics and Engineering Mentoring
2011 American Society for Microbiology DC White Research and Mentoring Award
2011 Frederick Phineas Rose Professor, Yale University
2010 American Institute of Biological Sciences (AIBS) Education Award
2009 American Society for Microbiology Carski Foundation Distinguished Undergraduate Teaching Award
2009 Named "Revolutionary Mind" by Seed Magazine
2009 Fellow, Association for Women in Science
2008 Fellow, American Association for the Advancement of Science
2008 National Associate, National Research Council
2008 American Society for Microbiology Roche Diagnostics Alice C. Evans Award
2006 YWCA Woman of Distinction Award
2004 National Academies Education Mentor in the Life Sciences
2003 Fellow, American Academy of Microbiology
2002 Howard Hughes Medical Institute Professor
2002 Clark Lecturer in Soil Biology, Soil Science Society of America
1998 Cabinet 99 Recognition Award, University of Wisconsin
1995 Chancellor's University Teaching Award, University of Wisconsin
1991 Jung Excellence in Teaching Award for the College of Agricultural and Life Sciences at the University of Wisconsin
1988 Chancellor's Research-Service Award, University of Wisconsin
1984 1985 NIH Postdoctoral Fellowship
1984 American Cancer Society Postdoctoral Fellowship

SERVICE ON EDUCATIONAL AND SCIENTIFIC COMMITTEES

Integrated Program in Biochemistry, University of Wisconsin-Madison (2019 -)
CourseSource Advisory Board (2018-)
ASM Task Force Committee Advisory Board (2018-)
WARF Town Center Advisory Board (2018-)
Lawrence Berkeley National Lab Advisory Board (2017-)
CIENCIA PR (2017-)
American Society for Microbiology, President (2013)
American Society for Microbiology, President Elect (2012-2013)
National Academy of Sciences Board on Life Sciences, Chair (2012-2014)
American Association for the Advancement of Science Councilor-at-large (2012-2014)
Association of American Universities STEM Education Initiative Technical Advisory Committee,

(2012-2014)
University of Wisconsin-Madison Advisory Board for "What Matters in Mentoring?
Testing and Measuring a Mentor Training Intervention," Board (2012-2014)
American Association for the Advancement of Science Section O Steering Committee (2012-2014)
American Association for the Advancement of Science Committee on Nominations, (2011-2014)
Yale University HHMI Program Steering Committee (2011-2014)
Yale University Diversity Fellows Program, Co-Director (2011-2014)
President's Council of Advisors on Science and Technology Working Group, STEM Education in Higher Ed, Co-Chair (2010-2012)
National Institutes of Health Junior Faculty Mentoring Course, Steering Committee (2010)
External Advisory Committee, ADVANCE Program, Lehigh University (2010-2014)
Yale University Committee on Mass Data Storage (2010-2014)
Committee on Yale College Education (CYCE) Steering Committee (2010-2011)
Yale University Science Council (2010)
Yale University Budget Committee (2010-2013)
Yale University MCDB Faculty Search Committee, Plant Science (2010-2014)
President's Council of Advisers on Science and Technology Working Group, K-12 STEM Education (2009-2010)
Harvard School of Public Health, Visiting Committee (2009-2014)
The ISME Journal, Editorial Board (2007-2014)
National Institutes of Health, Organizer, Workshop on Microbial Ecology (2008)
Wisconsin Academy of Arts and Science (2008)
American Academy of Microbiology, Committee on Colloquia (2007-2011)
Rosalind Franklin Society, President (2006-2012)
Wisconsin Institute for Discovery Steering Committee (2006-2009)
National Institutes of Health Roadmap Planning Committee (2006)
National Academy of Sciences Board on Life Sciences (2005-2011)
Institute of Medicine of the National Academies, Forum on Microbial Threats (2005-2010)
University of Wisconsin Department of Plant Pathology Academic Affairs Committee (2005-2006)
University of Wisconsin Department of Plant Pathology Admissions Committee (2005-2006)
National Research Council Metagenomics Report Committee: Challenges and Functional Applications, Co Chair (2005-2007)
The National Academies Committee on Women in Academic Science and Engineering (2005-2006)
University of Wisconsin System Working Group for the Status of Women (2005-2006)
University of Wisconsin Honorary Degrees Committee, Chair (2004-2009)
University of Wisconsin Chancellor's Advisory Committee (2004-2008)
American Society for Microbiology Committee on Graduate Education (2004-2006)
American Academy of Microbiology Alice Evans Award Nominations (2004-2006)
Institute for Cross-College Biology Education Steering Committee (2004-2005)
University of Wisconsin Department of Plant Pathology Long Range Planning Committee (2003-2005)
The National Academies Summer Institutes on Undergraduate Education in Biology Steering Committee (2003-2014)
American Society for Microbiology Small Conferences Committee (2003-2007)
USDA National Research Initiative Panel Manager (2002-2003)
University of Wisconsin Provost's Climate Networking Group (2001-2004)
University of Wisconsin Department of Plant Pathology Long Range Planning Committee, Chair (2001-2003)
University of Wisconsin Search Committee for Dean of the Graduate School, Chair (2001-2002)

University of Wisconsin Search Committee for Director of Research and Sponsored Programs (2001)
University of Wisconsin Search Committee for Chancellor (2000)
University of Wisconsin Center for Biology Education Executive Committee (1999-2004)
University of Wisconsin Women Faculty Mentoring Program (1998-2007)
University of Wisconsin Graduate School Technology Transfer Council (1998-2003)
Chemical Biology Initiative at the University of Wisconsin, Co-Chair (1998-2002)
University of Wisconsin Committee on Women at the University (1996-2001); Chair, (1998-2000)

MEMBERSHIP AND PARTICIPATION IN PROFESSIONAL SOCIETIES

American Society for Microbiology
American Association for the Advancement of Science
The International Society for Molecular Plant-Microbe Interactions
Soil Science Society of America
The International Society for Microbial Ecology

PUBLICATIONS IN MICROBIOLOGY

Sivakumar, R., J. Ranjani, U. S. Vishnu, S. Jayashree, G. L. Lozano, J. Miles, N. A. Broderick, C. Guan, P. Gunasekaran, J. Handelsman, J. Rajendhran. 2019. Evaluation of InSeq to identify genes essential for *Pseudomonas aeruginosa* PGPRS2 corn root colonization. G3 Genes, Genomes, Genetics 9(3): 651-661.

Lozano, G.L., H.B. Park, J.I. Bravo, E.A. Armstrong, J.M. Denu, E.V. Stabb, N.A. Broderick, J.M. Crawford, J. Handelsman. 2019. Bacterial analogs of plant piperidine alkaloids mediate microbial interactions in a rhizosphere model system. Applied and Environmental Microbiology doi: https://doi.org/10.1101/499731 (in press).

Lozano, G.L., J.I. Bravo, M.F. Garavito, H.B. Park, A. Hurley, S.B. Peterson, E.V. Stabb, J.M. Crawford, N.A. Broderick, J. Handelsman. 2019. Introducing THOR, a model microbiome for genetic dissection of community behavior. mBio 10(2): e1-18.

Lozano G.L., J.I. Bravo, J. Handelsman. 2017. Draft genome sequence of *Pseudomonas koreensis* CI12, a *Bacillus cereus* "hitchhiker" from the soybean rhizosphere. Genome Announcements 5:e00570–17.

Rodrõguez, M.M., R.I. Herman, B. Ghiglione, F. Kerff, G. Gonzalez, F. Bouillenne, M. Galleni, J. Handelsman, P. Charlier, G. Gutkind, E. Sauvage, P. Power. 2017. Crystal structure and kinetic analysis of the class B3 di-zinc metallo-β-lactamase LRA-1 from an Alaskan soil metagenome. PLoS ONE 12(7):e0182043.

Bravo, J.I., G.L. Lozano, J. Handelsman. 2017. Draft genome sequence of *Flavobacterium johnsoniae* CI04, an isolate form the soybean rhizosphere. Genome Announcements 5:e01535-16.

Fischer C.N., Trautman E.P., Crawford J.M., Stabb E.V., Handelsman J., Broderick N.A. 2017. Metabolite exchange between microbiome members produces compounds that influence *Drosophila* behavior. eLife (2) 9:6.

Lozano, C.N., J. Holt, J. Ravel, D. A. Raskom, M.G. Thomas, J. Handelsman. 2016. Draft genome sequence of biocontrol agent *Bacillus cereus* UW85. Genome Announcements 4: e00910-16.

Stulberg, E.R., G.L. Lozano, J.B. Morin, H. Park, E.G. Baraban, C. Mlot, C. Heffelfinger, G.M. Phillips, J.S. Rush, A.J. Phillips, N.A. Broderick, M.G. Thomas, E.V. Stabb, and J. Handelsman. 2016. Genomic and secondary metabolite analyses of *Streptomyces* sp. 2AW provide insight into the evolution of the cycloheximide pathway. Frontiers in Microbiology 7 (573): 1-12.

Allen, H.K., R. An, J. Handelsman, L.A. Moe. 2015. A response regulator from a soil metagenome enhances resistance to the β-lactam antibiotic carbenicillin in *Escherichia coli*. PLoS One 10(3):e0120094.

Miles J., J.F. Holt, J. Handelsman. 2015. Allies and adversaries: Roles of the microbiome in infectious disease. Microbe 10: 370-374.

Holt, J.F., M.R. Kiedrowski, K.L. Frank, J. Du, C. Guan, N.A. Broderick, G.M. Dunny, J. Handelsman. 2015. *Enterococcus faecalis* 6-phosphogluconolactonase is required for both commensal and pathogenic interactions with *Manduca sexta*. Infection and Immunity 83(1): 396-404.

Hegan, P., M. Mooseker, J. Handelsman. 2014. Effect of probiotic and pathogenic bacteria on *Drosophila* intestinal pathology. Journal of Biomolecular Techniques 25(Suppl):S26.

Udikovic-Kolic, N., F. Wichmann, N.A. Broderick, J. Handelsman. 2014. Bloom of resident antibiotic-resistant bacteria in soil following manure fertilization. Proceedings of the National Academy of Sciences 111(42): 15202-15207. doi:10.1073/pnas.1409836111.

Shade, A., S.E. Jones, J.G. Caporaso, J. Handelsman, R. Knight, N. Fierer, J.A. Gilbert. 2014. Conditionally rare taxa disproportionately contribute to temporal changes in microbial diversity. mBio 5(4): e01371-14.

Wichmann, F., N. Udikovic-Kolic, S. Andrew, J. Handelsman. 2014. Diverse antibiotic resistance genes in dairy cow manure. mBio 5(2): e01017-13.

Blum, J.E., C.N. Fischer, J. Miles, J. Handelsman. 2013. Frequent replenishment sustains the beneficial microbiome of *Drosophila melanogaster*. mBio 4(6): e00860-13. doi:10.1128/mBio.00860-13.

Shade, A., A.K. Klimowicz, R.N. Spear, M. Linske, J.J. Donato, C.S. Hogan, P.S. McManus, J. Handelsman. 2013. Streptomycin application has no detectable effect on bacterial community structure in apple orchard soil. Applied and Environmental Microbiology 79(21): 6617-6625.

Baraban, E.G., J.B. Morin, G.M. Phillips, A.J. Phillips, S.A. Strobel, J. Handelsman. 2013. Xyolide, a bioactive nonenolide from an Amazonian endophytic fungus, *Xylaria feejeensis*. Tetrahedron Letters 54(31): 4058-4060 DOI: 10.1016/j.tetlet.2013.05.093.

Shade, A., J.G. Caporaso, J. Handelsman, R. Knight, N. Fierer. 2013. A meta-analysis of changes in bacterial and archaeal communities with time. ISME Journal 7(8): 1493-1506. 7(8):1493-506. doi: 10.1038/ismej.2013.54

Shade, A., P.S. McManus, J. Handelsman. 2013. Unexpected diversity during community succession in the apple flower microbiome. mBio 4(2):e00602-12. doi:10.1128/mBio.00602-12.

Shade, A., H. Peter, S.D. Allison, D. Baho, M. Berga, H. Buergmann, D.H. Huber, S. Langenheder, J.T. Lennon, J.B. Martiny, K. Matulich, T.M. Schmidt, J. Handelsman. 2012. Fundamentals of microbial community resistance and resilience. Frontiers in Microbiology 3: 417. doi:10.3389/fmicb.2012.00417.

Araujo J.F., A.P. de Castro, M.M. Costa, R.C. Togawa, G.J. Júnior, B.F. Quirino, M.M. Bustamante, L. Williamson, J. Handelsman, and R.H. Krüger. 2012. Characterization of soil bacterial assemblies in Brazilian savanna-like vegetation reveals Acidobacteria dominance. Microbial Ecology 64(3):760-770.

Shade, A., C.S. Hogan, A.K. Klimowicz, M. Linske, P.S. McManus, J. Handelsman. 2012. Culturing captures members of the soil rare biosphere. Environmental Microbiology 14(9): 2247-2252.

McMahon, M.D., C. Guan, J. Handelsman, M.G. Thomas. 2012. Metagenomic analysis of *Streptomyces lividans* reveals host-dependent functional expression. Applied and Environmental Microbiology 78: 3622-3629.

Shade, A., J. Handelsman. 2012. Beyond the Venn diagram: The hunt for a core microbiome. Environmental Microbiology 14(1): 4-12.

de Castro, A.P., B.F. Quirino, H. Allen, L.L. Williamson, J. Handelsman, R.H. Kruger. 2011. Construction and validation of two metagenomic DNA libraries from Cerrado soil with high clay content. Biotechnology Letters 33: 2169-2175.

Mason, K.L., T.A. Stepien, J.E. Blum, J.F. Holt, N.H. Labbe, J.S. Rush, K.F. Raffa, J. Handelsman. 2011. From commensal to pathogen: Translocation of *Enterococcus faecalis* from the midgut to the hemocoel of *Manduca sexta*. mBio 2(3): e00065-11.

Maloy, S., J. Handelsman, S. Singh. 2011. Dynamics of host-associated microbial communities. Microbe 6: 21-25.

Schloss, P.D., H.K. Allen, A.K. Klimowicz, C. Mlot, J.A. Gross, S. Savengsuksa, J. McEllin, J. Clardy, R.W. Ruess, J. Handelsman. 2010. Psychrotrophic strain of *Janthinobacterium lividum* from a cold Alaskan soil produces prodigiosin. DNA and Cell Biology 29(9): 533-41.

Borlee, B.R., G.D. Geske, H.E. Blackwell, J. Handelsman. 2010. Identification of synthetic inducers and inhibitors of the quorum-sensing regulator LasR in by high-throughput screening. Applied and Environmental Microbiology 76(24): 8255-8258.

Klimowicz, A.K., T.A. Benson, J. Handelsman. 2010. A quadruple enterotoxin-deficient mutant of *Bacillus thuringiensis* remains insecticidal. Microbiology 156: 3575-3583.

Lang, K.S., J.M. Anderson, S. Schwarz, L. Williamson, J. Handelsman, R.S. Singer. 2010. Novel florfenicol and chloramphenicol resistance gene discovered in Alaskan soil by using functional metagenomics. Applied and Environmental Microbiology 76(15): 5321-5326.

Donato, J., L.A. Moe, B.J. Converse, K.D. Smart, F.C. Berklein, P.S. McManus, J. Handelsman. 2010. Metagenomic analysis of apple orchard soil reveals antibiotic resistance genes encoding predicted bifunctional proteins. Applied and Environmental Microbiology 76(13): 4396-4401.

Broderick, N.A., E. Vasquez, J. Handelsman, K. F. Raffa. 2010. Effect of clonal variation among hybrid poplars on susceptibility of gypsy moth (Lepidoptera: Lymantriidae) to *Bacillus thuringiensis* subsp. kurstaki. Journal of Economic Entomology 103(3): 718-725.

Broderick, N.A., K.F. Raffa, J. Handelsman. 2010. Chemical modulators of the innate immune response alter gypsy moth larval susceptibility to *Bacillus thuringiensis*. BMC Microbiology 10(1): 129.

Allen, H.K., J. Donato, H.H. Wang, K.A. Cloud-Hansen, J. Davies, J. Handelsman. 2010. Call of the wild: Antibiotic resistance genes in natural environments. Nature Reviews Microbiology 8(4): 251-259.

Robinson, C.J., P.D. Schloss, Y. Ramos, K.F. Raffa, J. Handelsman. 2010. Robustness of the bacterial community in the cabbage white butterfly larval midgut. Microbial Ecology 59(2): 199-211.

Borlee, B.R., G.D. Geske, H.E. Blackwell, J. Handelsman. 2010. Identification of synthetic inducers and inhibitors of the quorum-sensing regulator LasR in *Pseudomonas aeruginosa* by high-throughput screening. Applied and Environmental Microbiology 76(24): 8255-8258. [PubMed]

Handelsman, J. 2009. Metagenetics: Spending our inheritance on the future. Microbial Biotechnology 2(2): 138-139.

Broderick, N.A., C.J. Robinson, M.D. McMahon, J. Holt, J. Handelsman, K.F. Raffa. 2009. Contributions of gut bacteria to *Bacillus thuringiensis*-induced mortality vary across a range of Lepidoptera. BMC Biology 7: 11-20.

Klepzig, K.D., A.S. Adams, J. Handelsman, K.F. Raffa. 2009. Symbioses: A key driver of insect physiological processes, ecological interactions, evolutionary diversification, and impacts on humans. Environmental Entomology 38(1): 67-77.

Allen, H.K., K.A. Cloud-Hansen, J.M. Wolinski C. Guan, S. Greene, S. Lu, M. Boeyink, N.A. Broderick, K.F. Raffa, J. Handelsman. 2009. Resident microbiota of the gypsy moth midgut harbor antibiotic resistance determinants. DNA and Cell Biology 28(3): 109-117.

Sabree, Z.L., M.R. Rondon, J. Handelsman. 2009. Metagenomics. In: Encyclopedia of Microbiology (Third Edition). Academic Press, pp. 622- 632.

Vasanthakumar, A., J. Handelsman, P.D. Schloss, K.F. Raffa. 2008. Gut microbiota of an invasive subcortical beetle, *Agrilus planipennis* Fairmaire, across various life stages. Environmental Entomology 37(5): 1344-1353.

Allen, H. K., L.A. Moe, J. Rodbumrer, A. Gaarder, J. Handelsman. 2008. Functional metagenomics reveals diverse β-lactamases in a remote Alaskan soil. ISME Journal 3: 243–251.

Little, A.E.F., C. Robinson, S.B. Peterson, K.F. Raffa, J. Handelsman. 2008. Rules of engagement: Interspecies interactions that regulate microbial communities. Annual Review of Microbiology 62: 375–401.

Borlee, B. R., G.D. Geske, C.J. Robinson, H. Blackwell, J. Handelsman. 2008. Quorum-sensing signals in the microbial community of the cabbage white butterfly larval midgut. ISME Journal 2: 1101-1111.

Liles, M.R., L.L. Williamson, J. Rodbumrer, V. Torsvik, R.M. Goodman, J. Handelsman. 2008. Recovery, purification, and cloning of high-molecular weight DNA from soil microorganisms. Applied and Environmental Microbiology 74(10): 3302-3305.

Isenbarger, T. A., M. Finney, C. Ríos-Velázquez, J. Handelsman, G. Ruvkun. 2008. Miniprimer PCR, a new lens for viewing the microbial world. Applied and Environmental Microbiology 74(3): 840-849.

Schloss, P.D., J. Handelsman. 2008. The last word: Books as a statistical metaphor for microbial communities. Annual Review of Microbiology 61: 23-24.

Schloss, P.D., J. Handelsman. 2008. A statistical toolbox for metagenomics: Assessing functional diversity in microbial communities. BMC Bioinformatics 9:34.

Handelsman, J. 2007. Metagenomics and microbial communities. In: Encyclopedia of the Life Sciences. John Wiley and Sons, Ltd. Chichester, UK.

Delalibera, I. A. Vasanthakumar, B.J. Burwitz, P.D. Schloss, K.D. Klepzig, J. Handelsman, K.F. Raffa. 2007. Composition of the bacterial community in the gut of the pine engraver, *Ips pini* (Say) (Coleoptera) colonizing red pine. Symbiosis 43: 97-104.

Guan, C., J. Ju, B.R. Borlee, L.L. Williamson, B. Shen, K.F. Raffa, J. Handelsman. 2007. Signal mimics derived from a metagenomic analysis of gypsy moth gut microbiota. Applied and Environmental Microbiology 73(11): 3669-3676.

Peterson, S.B., A.K. Dunn, A.K. Klimowicz, J. Handelsman. 2006. Peptidoglycan from *Bacillus cereus* mediates commensalism with rhizosphere bacteria from the *Cytophaga-Flavobacterium* group. Applied and Environmental Microbiology 72: 5421-5427.

Vasanthakumar, A, I. Delalibera Jr., J. Handelsman, K.D. Klepzig, P. Schloss, K.F. Raffa. 2006. Characterization of gut-associated microorganisms in larvae and adults of the Southern pine beetle, *Dendroctonus frontalis* Zimmerman. Environmental Entomology 35: 1710-1717.

Broderick, N.A., K.R. Raffa, J. Handelsman. 2006. Midgut bacteria required for *Bacillus thuringiensis* insecticidal activity. Proceedings of the National Academy of Sciences 103(41): 15196-15199.

Chan, Y.A., M.T. Boyne, A.M. Podevels, A.K. Klimowicz, J. Handelsman, N.L. Kelleher, M.G. Thomas. 2006. Hydroxymalonyl-acyl carrier protein (ACP) and aminomalonyl-ACP are two additional type I polyketide synthase extender units. Proceedings of the National Academy of Sciences 103(39): 14349-14354.

Sabree, Z.L., V. Bergendahl, M.R. Liles, R.R. Burgess, R.M. Goodman, J. Handelsman. 2006. Identification and characterization of the gene encoding the *Acidobacterium capsulatum* major sigma factor. Gene 376: 144-151.

Peterson, S.B., A.K. Dunn, A.K. Klimowicz, J. Handelsman. 2006. Peptidoglycan from *Bacillus cereus* mediates commensalism with rhizosphere bacteria from the *Cytophaga-Flavobacterium* group. Applied and Environmental Microbiology 72: 5421-5427.

Schloss, P.D., I. Delalibera, J. Handelsman, K.F. Raffa. 2006. Bacteria associated with the guts of two wood-boring beetles: *Anoplophora glabripennis* and *Saperda vestita* (Cerambycidae). Environmental Entomology 35: 625-629.

Schloss, P.D. J. Handelsman. 2006. Introducing TreeClimber, a test to compare microbial community structures. Applied and Environmental Microbiology 72: 2379-2384.

Schloss, P.D., J. Handelsman. 2006. Introducing SONS, A tool for operational taxonomic unit-based comparisons of microbial community memberships and structures. Applied and Environmental Microbiology 72(10): 6773-6779.

Schloss, P.D., J. Handelsman. 2006. Toward a census of bacteria in soil. PLoS Computational Biology 2: e92.

Handelsman, J. 2006. Metagenomics or megagenomics? Nature Reviews Microbiology 3: 457-458.

Cloud-Hansen, K.A., S.B. Peterson, E.V. Stabb, W.E. Goldman, M.J. McFall-Ngai, J. Handelsman. 2006. Breaching the great wall: Peptidoglycan and microbial interactions. Nature Reviews Microbiology 4: 710-716.

Gillespie, D., M.R. Rondon, J. Handelsman. 2005. Metagenomic libraries from uncultured microorganisms. In: Molecular Microbial Ecology. A.M. Osborn and C. J. Smith, eds. Bios Sci. Pub. P 261-279.

Williamson, L.L., B.R. Borlee, P.D. Schloss, C. Guan, H.K. Allen, J. Handelsman. 2005. Intracellular screen to identify metagenomic clones that induce or inhibit a quorum-sensing biosensor. Applied and Environmental Microbiology 71: 6335-6344.

Handelsman, J. 2005. How to find new antibiotics. The Scientist 19:20.

Schloss, P.D., J. Handelsman. 2005. Metagenomics for studying unculturable microorganisms: Cutting the Gordian knot. Genome Biology 6: 229.

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Handelsman, J. 2005. Sorting out metagenomes. Nature Biotechnology 23(1): 38-39.

Schloss, P. D., J. Handelsman. 2004. Status of the microbial census. Microbiology and Molecular Biology Reviews 68(4): 686-691.

Handelsman, J. 2004. Metagenomics: Application of genomics to uncultured microorganisms. Microbiology and Molecular Biology Reviews 68(4): 669- 685.

Liles, M.R., L.L. Williamson, J. Handelsman, R.M. Goodman. 2004. Isolation of high molecular weight genomic DNA from soil bacteria for genomic library construction. In Molecular Microbial Ecology Manual, 2nd ed. G.G. Kowalchuk, F.J. de Bruijn, I.M. Head, A.D. Akkermans, and J.D. van Elsas, eds. The Netherlands: Kluwer Academic Publishers, pp. 839-852.

Safdar, N., J. Handelsman, D.G. Maki. 2004. Does combination antimicrobial therapy reduce mortality in gram-negative bacteraemia? A meta-analysis. The Lancet – Infectious Diseases 4(8): 519-27.

Schloss, P.D., B.R. Larget, J. Handelsman. 2004. Integration of microbial ecology and statistics: A test to compare gene libraries. Applied and Environmental Microbiology 70(9): 5485-92.

Riesenfeld, C.R., P.D. Schloss, J. Handelsman. 2004. Metagenomics: Genomic analysis of microbial communities. Annual Review of Genetics 38: 525-52.

Riesenfeld, C.R., R.M. Goodman, J. Handelsman. 2004. Uncultured soil bacteria are a reservoir of new antibiotic resistance genes. Environmental Microbiology 6(9): 981-989.

Emmert, E.A.B., A.K. Klimowicz, M.G. Thomas, J. Handelsman. 2004. Genetics of zwittermicin A production in *Bacillus cereus*. Applied and Environmental Microbiology 70: 104-113.

Broderick, N.A., K. Raffa, R.M. Goodman, J. Handelsman. 2004. Census of the bacterial community of the gypsy moth larval midgut using culturing and culture-independent methods. Applied and Environmental Microbiology 70: 293-300.

Handelsman, J. 2004. Soils – the metagenomics approach. In: Microbial Diversity Bioprospecting. Alan T. Bull, ed. American Society for Microbiology Press, pp. 109-119.

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