

CURRICULUM VITAE

JO HANDELSMAN

Howard Hughes Medical Institute Professor and
Frederick Phineas Rose Professor
Yale University
Department of Molecular, Cellular & Developmental Biology
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New Haven, CT 06511
(203) 432-9119

EDUCATION

1979-1984 Ph.D., University of Wisconsin-Madison, Molecular Biology
1976-1979 B.S., Cornell University, Agronomy

POSITIONS HELD

2014- Associate Director for Science, The White House Office of Science and
Technology Policy
2010- 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- 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 insect guts. The lab is exploring the insect gut as a model for human gut microbiology and to study the nature of community robustness and invasion processes that may govern gut health and stability.

AWARDS AND HONORS

- 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, Elected Member
- 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

RECENT SERVICE ON EDUCATIONAL AND SCIENTIFIC COMMITTEES

- American Society for Microbiology, President (2013)
- National Academy of Sciences Board on Life Sciences, Chair (2012-2014)
- American Society for Microbiology, President Elect (2012-2013)
- American Academy of Arts and Sciences Councilor-at-large (2012-2014)
- Association of American Universities STEM Education Initiative Technical Advisory Committee, Member (2012-2014)

University of Wisconsin-Madison Advisory Board for “What Matters in Mentoring? Testing and Measuring a Mentor Training Intervention,” Board Member (2012-2014)

American Academy of Arts and Sciences Section O Steering Committee, Member (2012-2014)

American Academy of Arts and Sciences Committee on Nominations, Member (2011-2014)

University of Minnesota CourseSource Advisory Committee, Member (2011-2014)

Yale University HHMI Program Steering Committee, Member (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 Member (2010)

External Advisory Committee, ADVANCE Program, Lehigh University, Member (2010-2014)

Yale University Committee on Mass Data Storage, Member (2010-2014)

Committee on Yale College Education (CYCE) Steering Committee, Member (2010-2011)

Yale University Science Council, Member (2010)

Yale University Budget Committee, Member (2010-2013)

Yale University MCDB Faculty Search Committee, Plant Science, Member (2010-2014)

President’s Council of Advisors on Science and Technology Working Group, K-12 STEM Education, Member (2009-2010)

Committee to Visit the Harvard School of Public Health, Member (2009-2014)

The ISME Journal, Editorial Board Member (2007-2014)

National Institutes of Health, Organizer, Workshop on Microbial Ecology (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, Member (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

GRADUATE STUDENTS TRAINED (DEGREE, YEAR OF COMPLETION, TRAINING PROGRAM, CURRENT POSITION)

Gwyn Beattie, Ph.D., 1991, Cell and Molecular Biology, *Professor, Robert Earle Buchanan Distinguished Professor of Bacteriology for Research and Nomenclature, Iowa State University*
 Greg Gilbert, Ph.D., 1991, Plant Pathology (co-advised with J.L. Parke), *Professor, Pepper-Giberson Chair of Environmental Studies, University of California-Santa Cruz*
 Larry Halverson, Ph.D., 1991, Institute for Environmental Studies, *Research Associate Professor, Iowa State University*
 Ricardo Araujo, Ph.D., 1992, Plant Pathology, *Lecturer, Brazil*
 Kevin Smith, M.S., 1992, Plant Breeding and Plant Genetics (co-advised with M.J. Havey), *Professor, University of Minnesota*
 Kevin O'Connell, Ph.D., 1993, Bacteriology, *Researcher, Naval Research Unit, Adjunct Assistant Professor, University of Maryland*
 Laura Silo-Suh, Ph.D., 1994, Bacteriology, *Assistant Professor, Microbiology,*

Mercer University

- Eduardo Robleto, M.S., 1995, Plant Pathology, *Associate Professor, University of Nevada, Las Vegas*
- Eric Stabb, Ph.D., 1997, Bacteriology, *Professor, University of Georgia*
- Elizabeth Stohl, Ph.D., 1998, Cell and Molecular Biology, *Research Assistant Professor, Northwestern University Medical School*
- Amy Klimowicz, M.S., 1999, Bacteriology, *Research Specialist, University of Wisconsin-Madison*
- Elizabeth Emmert, Ph.D., 1999, Bacteriology, *Associate Professor, Salisbury University*
- Mark Bittinger, Ph.D., 1999, Cell and Molecular Biology, *Associate Director, Target Biology, Belfer Institute for Applied Cancer Science*
- Zhengrong Cui, M.S., 1999, Plant Pathology (co-advised with R.M. Goodman), *Associate Professor, Pharmacology, University of Oregon*
- Anne Dunn, Ph.D., 2002, Bacteriology, *Associate Professor, University of Oklahoma*
- Lynn Williamson, M.S. 2005, Bacteriology, *Research Specialist, University of Wisconsin-Madison*
- Christian Riesenfeld, Ph.D., 2006, Microbiology, *NSF Postdoctoral Fellow, Desert Research Institute*
- Brad Borlee, Ph.D., 2006, Plant Pathology, *Assistant Professor, Colorado State University*
- Katherine Butler, M.S., 2006, Bacteriology, *Laboratory Technician, UCSD*
- Brad Garcia, Ph.D., 2008, Plant Pathology, *Director of Technology & Business Development, Primorigen Biosciences*
- Zakee Sabree, Ph.D., 2008, Microbiology, *Assistant Professor, Ohio State University*
- Brook Peterson, Ph.D., 2008, Microbiology, *Postdoctoral Fellow, University of Washington*
- Courtney Robinson, Ph.D., 2008, Microbiology, *Assistant Professor, Howard University*
- Heather Allen, Ph.D., 2009, Microbiology, *Scientist, USDA, Iowa State University*
- Brandon Converse, M.S., 2009, Bacteriology, *Research Specialist, Department of Geology, University of Wisconsin-Madison*
- Cliff Hogan, M.S., 2009, Bacteriology, *Microbiology Ph.D. student, University of Wisconsin-Madison*
- Lindsay Rusnak, M.S., 2009, Plant Pathology, *Instructor, Madison Area Technical College*
- Nichole Broderick, Ph.D., 2009, Entomology and Microbiology, *Associate Research Scientist, Yale University*
- Matthew McMahon, Ph.D., 2011, Microbiology (joint with Prof. Michael Thomas), *Scientist of Metabolic Engineering at Joule Unlimited Technologies, Inc.*
- Elizabeth Winograd-Cort, Ph.D., 2013, Molecular, Cellular and Developmental Biology, *Congressional Science Fellow*
- Jonathan Holt, Ph.D., 2013, Microbiology

CURRENT GRADUATE STUDENTS (DEGREE, TRAINING PROGRAM)

Caleb Fischer, Ph.D., Molecular, Cellular and Developmental Biology

Gabriel Lozano, Ph.D., Molecular, Cellular and Developmental Biology
Jessica Miles, Ph.D., Microbiology

PUBLICATIONS: MICROBIOLOGY

- 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.
- Miles J., J.F. Holt, and J. Handelsman. 2015. Allies and adversaries: roles of the microbiome in infectious disease. *Microbe Magazine*. 10: 370-374.
- Holt, J.F., M.R. Kiedrowski, K.L. Frank, J. Du, C. Guan, N.A. Broderick, G.M. Dunny, and 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.
- Udikovic-Kolic, N., F. Wichmann, N.A. Broderick, and J. Handelsman. 2014. Bloom of resident antibiotic-resistant bacteria in soil following manure fertilization. *Proceedings of the National Academy of Sciences*. doi:10.1073/pnas.1409836111.
- Shade, A., S.E. Jones, J.G. Caporaso, J. Handelsman, R. Knight, N. Fierer, and 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, and J. Handelsman. 2014. Diverse antibiotic resistance genes in dairy cow manure. *mBio*. 5(2): e01017-13.
- Blum, J.E., C.N. Fischer, J. Miles, and 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, and 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, and J. Handelsman. 2013. Xyolide, a bioactive nonenolide from an Amazonian endophytic fungus, *Xylaria feejeensis*. *Tetrahedron Letters*. doi: 10.1016/j.tetlet.2013.05.093.
- Shade, A., J.G. Caporaso, J. Handelsman, R. Knight, and N. Fierer. 2013. A meta-analysis of changes in bacterial and archaeal communities with time. *ISME Journal*. doi: 10.1038/ismej.2013.54.

- Shade, A., P.S. McManus, and 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, and 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, and J. Handelsman. 2012. Culturing captures members of the soil rare biosphere. *Environmental Microbiology*. 14(9): 2247-2252.
- McMahon, M.D., C. Guan, J. Handelsman, and M.G. Thomas. 2012. Metagenomic analysis of *Streptomyces lividans* reveals host-dependent functional expression. *Applied and Environmental Microbiology*. 78: 3622-3629.
- Shade, A. and 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, and R.H. Krüger. 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, and 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, and 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, and 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, and 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.
- Klimowicz, A.K., T.A. Benson, and 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 and 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 and 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 and 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 and 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 and 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 and J. Handelsman. 2010. Robustness of the bacterial community in the cabbage white butterfly larval midgut. *Microbial Ecology*. 59(2): 199-211.
- 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 and 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, and 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, and 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, and J. Handelsman. 2009. Metagenomics. In: *Encyclopedia of Microbiology* (Third Edition). Academic Press, pp. 622-632.
- Vasanthakumar, A., J. Handelsman, P.D. Schloss, and 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, and 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, and 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, and 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, and 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, and G. Ruvkun. 2008. Miniprimer PCR, a new lens for viewing the microbial world. *Applied and Environmental Microbiology*. 74(3): 840-849.
- Schloss, P.D. and J. Handelsman. 2008. The last word: Books as a statistical metaphor for microbial communities. *Annual Review of Microbiology*. 61: 23-24.
- Schloss, P.D. and 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, and 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, and J. Handelsman. 2007. Signal mimics derived from a metagenomic analysis of gypsy moth gut microbiota. *Applied and Environmental Microbiology*. 73(11): 3669-3676.

- Vasanthakumar, A, I. Delalibera Jr., J. Handelsman, K.D. Klepzig, P. Schloss, and 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, and 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, and 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, and 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. and J. Handelsman. 2006. Introducing TreeClimber, a test to compare microbial community structures. *Applied and Environmental Microbiology*. 72: 2379-2384.
- Schloss, P.D. and 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. and 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, and J. Handelsman. 2006. Breaching the great wall: Peptidoglycan and microbial interactions. *Nature Reviews Microbiology*. 4: 710-716.

- Gillespie, D., M.R. Rondon, and J. Handelsman. 2005. Metagenomic libraries from uncultured microorganisms. In: *Molecular Microbial Ecology*. A.M. Osborn and C. J. Smith, eds. Bios Sci. Pub.: 261-279.
- Williamson, L.L., B.R. Borlee, P.D. Schloss, C. Guan, H.K. Allen, and 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. and J. Handelsman. 2005. Metagenomics for studying unculturable microorganisms: Cutting the Gordian knot. *Genome Biology*. 6: 229.
- Delalibera, I., K. Raffa, and J. Handelsman. 2005. Contrasts in cellulolytic activities of gut microorganisms between the wood borer *Saperda vestita* (Coleoptera: Cerambycidae), and the bark beetles *Ips pini*, and *Dendroctonus frontalis* (Coleoptera: Curculionidae). *Environmental Entomology*. 34: 541-547.
- Handelsman, J., C.J. Robinson, and K. Raffa. 2005. Microbial communities in lepidopteran guts: From models to metagenomics. In: *The Influence of Cooperative Bacteria on Animal Host Biology*. M.J. McFall-Ngai, B. Henderson, and E.G. Ruby, eds. New York: Cambridge University Press, pp. 143-168.
- Schloss, P. D., and J. Handelsman. 2005. Introducing DOTUR, a computer program for defining operational taxonomic units and species richness. *Applied and Environmental Microbiology*. 71(3): 1501-1506.
- Handelsman, J. 2005. Sorting out metagenomes. *Nature Biotechnology*. 23(1): 38-39.
- Schloss, P. D., and 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, and 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, and 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, and J. Handelsman. 2004. Integration of microbial ecology and statistics: A test to compare gene libraries. *Applied and Environmental Microbiology*. 70(9): 5485-92.
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