

CURRICULUM VITAE

NAME: Shelley Erin Haydel

ADDRESS AND PHONE NUMBER: The Biodesign Institute
Center for Infectious Diseases and Vaccinology
School of Life Sciences
Arizona State University
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Shelley.Haydel@asu.edu

EDUCATION:

1989 - 1993 B.S. Microbiology, magna cum laude, Louisiana Tech University, Ruston, LA
1994 - 2000 Ph.D. Microbiology
Thesis: Identification and characterization of the *Mycobacterium tuberculosis* TrcR/TrcS two-component regulatory system
Advisors: Drs. William H. Benjamin, Jr. & Nancy E. Dunlap
Dept. of Microbiology, University of Alabama at Birmingham (UAB),
Birmingham, AL

EMPLOYMENT AND PROFESSIONAL POSITIONS

2/94 - 8/94 Laboratory Scientist, Louisiana Department of Public Health, Division of
Laboratory Services Central Laboratory, Tuberculosis Laboratory, New Orleans,
LA
2000 - 2005 Postdoctoral Research Associate
Project: Studies of two-component regulatory systems in *Mycobacterium
tuberculosis*
Sponsor: Dr. Josephine Clark-Curtiss
Dept. of Biology, Washington University, St. Louis, MO
2001 - 2004 Instructor, University College, College of Arts and Sciences, Washington
University, St. Louis, MO
2005 - present Assistant Professor, The Biodesign Institute, Center for Infectious Diseases and
Vaccinology, School of Life Sciences, Arizona State University, Tempe, AZ

TEACHING EXPERIENCE:

Courses

09/01 - 05/04 Instructor, Biology 5392 Molecular Microbiology and Pathogenesis, Dept. of
Biology, University College, Washington University, St. Louis, MO
2006 - present Instructor, MIC 381 Pathogenic Microbes, School of Life Sciences,
Arizona State University, Tempe, AZ
2007 - present Instructor, MIC 394 Medical Bacteriology, School of Life Sciences,
Arizona State University, Tempe, AZ

Laboratory teaching

- 3/93 - 5/93 Laboratory Teaching Assistant, Louisiana Tech University, Dept. of Clinical Laboratory Science and Bacteriology, Ruston, LA
- 11/99 - 3/00 Laboratory Facilitator, UAB/McWane Center Laboratory, GENEius Program, Birmingham, AL

Graduate Student Mentoring

- 09/97 - 12/97 Jason Johnston, Ph.D. rotation student, Cellular and Molecular Biology, UAB
- 06/03 - 08/03 Amanda Sheets, Ph.D. rotation student, Microbiology, Washington University
- 2005 - 2006 Alicia Sawyer, Master's of Natural Sciences, committee member
- 08/06 - 12/06 Rajani George, Ph.D. rotation student, Molecular and Cellular Biology, ASU
- 08/07 - present Brandon Guida, Ph.D. student, Molecular and Cellular Biology, Committee Chair
- 08/07 - present Tanya Borchardt, M.S. student, Microbiology, Committee Chair
- 01/08 - present Robin Treuer, Ph.D. student, Microbiology, Committee Chair (enrolled Fall 2005)
- 05/08 - present Terry Der, Ph.D. student, Molecular and Cellular Biology, Committee Co-Chair

Undergraduate Student Mentoring

- 06/97 - 08/97 Carrie Greeson, Visiting undergraduate summer student, Microbiology, UAB
- 09/05 - 08/06 Adam Passwater, Laboratory Assistant, Biology, Arizona State University
- 09/05 - 12/05 Tammi Duncan, MIC 401 Research Paper, Microbiology, School of Life Sciences, ASU
- 01/06 - 05/06 Elizabeth Weston, MIC 495 Undergraduate Research and MIC 401 Research Paper, Microbiology, School of Life Sciences, ASU
- 09/06 - 12/06 Brianna McGerty, MIC 401 Research Paper, Microbiology, School of Life Sciences, ASU
- 09/06 - 12/06 Andrew Webb, MIC 401 Research Paper, Microbiology, School of Life Sciences, ASU
- 09/06 - 12/06 Dalton Tomlinson, MIC 401 Research Paper, Microbiology, School of Life Sciences, ASU
- 01/07 - 05/07 Andrea House, MIC 401 Research Paper, Microbiology, School of Life Sciences, ASU
- 09/06 - 05/07 Donald Mathes III, Laboratory Assistant, Biochemistry, Arizona State University
- 06/06 - 05/07 Kevin Warren, MIC 495 Undergraduate Research and MIC 401 Research Paper, Microbiology, School of Life Sciences, ASU
- 01/07 - 06/07 Kenneth Mayeda, BCH 392 Research Techniques, Biochemistry, ASU
- 01/07 - 05/07 Amber Riblett, MIC 381 Barrett Honors College credit advisor

- 05/07 - 08/07 Bara Awad, MIC 401 Research Paper, Microbiology, School of Life Sciences, ASU
- 06/07 - present Amanda Cotey, School of Life Sciences SOLUR Apprentice, ASU
- 01/08 - 05/08 David Schwake, MIC 401 Research Paper, Microbiology, School of Life Sciences, ASU
- 01/08 - 05/08 Jonathan Grover, MIC 401 Research Paper, Microbiology, School of Life Sciences, ASU
- 01/08 - present Leila Hernandez, Laboratory assistant
- 01/08 - present Cody Cunningham, MIC 495 Undergraduate Research, Microbiology, School of Life Sciences, ASU
- 01/08 - present Jennifer Koehl, MIC 495 Undergraduate Research, Microbiology, School of Life Sciences, ASU

SOCIETY MEMBERSHIPS AND SERVICE:

- 1995 - present Member, American Society for Microbiology
- 1996 Student representative, UAB Dept. of Microbiology Faculty Promotions Committee
- 1996 Microbiology student representative, UAB Graduate School Recruitment Weekend
- 1997 Microbiology student representative, UAB Cellular and Molecular Biology (CMB) Graduate Program Admissions Committee
- 1999 - 2000 Student representative, UAB Dept. of Microbiology Graduate Program Faculty Committee
- 1999 Chair, UAB Dept. of Microbiology Student Committee
- 1999 Reviewer, David E. Wells Scholarship Selection Committee, UAB Dept. of Microbiology
- 2000 Member, Phi Kappa Phi, UAB Chapter
- 2005 - 2006 Member, ASU Faculty Women's Association
- 2005 - present Member, Research and Training Initiatives Committee, ASU School of Life Sciences
- 2006 - present Member, ASU School of Life Sciences Undergraduate Curriculum Review Committee for Microbiology
- 2007 - present Member, ASU Biodesign Institute Center for Infectious Diseases and Vaccinology Seminar Committee
- 2006 - 2007 Honors Disciplinary Faculty, Barrett Honors College, ASU
- 2007 - present Member, Geological Society of America
- 2008 - present Member, Clay Minerals Society

HONORS, AWARDS, AND FELLOWSHIPS:

- 1996 David E. Wells Memorial Scholarship for most outstanding Microbiology qualifying examination, UAB Dept. of Microbiology, Birmingham, AL
- 1997 ASM Sustaining Member Student Travel Grant, ASM General Meeting, Miami Beach, FL
- 1997 Leo Pine Student Travel Scholarship, Southeastern Branch ASM Meeting, Helen, GA

- 1999 First place award recipient, Sigma Xi / UAB Graduate Student Research Day Competition, Birmingham, AL
- 1999 Leo Pine Student Travel Scholarship, Southeastern Branch ASM Meeting, Jekyll Island, GA
- 1999 President's Award for graduate research and presentation, Southeastern Branch ASM, Jekyll Island, GA
- 2000 - 2002 Heiser postdoctoral research fellowship, Heiser Program for Research in Leprosy and Tuberculosis, New York, NY
- 2000 Samuel B. Barker Award for Excellence presented to the university's outstanding Ph.D. graduate, UAB Graduate School, Birmingham, AL
- 2002 Arnold Ravin-Muriel Rogers Travel Fellowship, Wind River Conference on Prokaryotic Biology, Estes Park, CO
- 2002 - 2003 Postdoctoral Research Trainee, Washington University School of Medicine, NIH Infectious Diseases Training Grant, St. Louis, MO
- 2006 ASU Selected Applicant for grant submission to the Searle Scholars Program
- 2006 Travel Award, ASU College of Liberal Arts and Sciences
- 2008 Selected Participant, National Academies – Howard Hughes Medical Institute Summer Institute on Undergraduate Education in Biology

INTELLECTUAL PROPERTY

United States Provisional Patent Application. Submitted March 27, 2008. L. B. Williams and S. E. Haydel. Inorganic composition and method for treating microbial infections.

COMPETITIVE FUNDING, FELLOWSHIPS, AND RESEARCH GRANTS:

R21 AT003618-01 Williams (PI) 09/01/06 - 08/31/08

NIH NCCAM grant. Total direct costs - \$275,000. Total costs - \$438,970.

Title: Assessing a clay mineral alternative antibiotic treatment for Buruli ulcer

Role: Co-Investigator

Status: Current

Postdoctoral Research Fellowship Haydel (PI) Completed

Heiser Program for Research in Leprosy and Tuberculosis

Identification and characterization of *Mycobacterium tuberculosis* genes regulated by the TrcR response regulator

J. E. Clark-Curtiss (Sponsor). Washington University (Host Institution). 07/01/00 - 06/30/02

Postdoctoral Training Grant Fellowship Goldberg (PI) Completed

NIH/NIAID

NRSA Institutional Infectious Diseases Training Grant

J. E. Clark-Curtiss (Sponsor). Washington University (Host Institution). 11/01/02 - 10/31/03

PENDING RESEARCH GRANTS:

R01 AT004690-01A1 Haydel (PI) 12/01/08 - 11/30/13

NIH NCCAM grant application. Total direct costs - \$1,125,000. Total costs - \$1,858,117.

Antibacterial minerals: mechanistic activity and alternative treatment for infections

Status: Pending, submitted 03/20/08

PUBLICATIONS (Journals):

- Haydel, S. E.**, N. E. Dunlap, and W. H. Benjamin, Jr. 1999. *In vitro* evidence of two-component system phosphorylation between the *Mycobacterium tuberculosis* TrcR/TrcS proteins. *Microb. Pathog.* **26**:195-206.
- Haydel, S. E.**, W. H. Benjamin, Jr., N. E. Dunlap, and J. E. Clark-Curtiss. 2002. Expression, autoregulation, and DNA binding properties of the *Mycobacterium tuberculosis* TrcR response regulator. *J. Bacteriol.* **184**:2192-2203.
- Haydel, S. E.** and J. E. Clark-Curtiss. 2004. Global expression analysis of two-component system regulators during *Mycobacterium tuberculosis* growth in human macrophages. *FEMS Microbiol. Lett.* **236**:341-347.
- Haydel, S. E.** and J. E. Clark-Curtiss. 2006. The *Mycobacterium tuberculosis* TrcR response regulator represses transcription of the intracellularly-expressed Rv1057 gene, encoding a seven-bladed β -propeller. *J. Bacteriol.* **188**:150-159.
- Haydel, S. E.**, C. M. Remenih, and L. B. Williams. 2008. Broad-spectrum in vitro antibacterial activities of clay minerals against antibiotic-susceptible and antibiotic-resistant bacterial pathogens. *J. Antimicrob. Chemother.* **61**:353-361.
- Williams, L. B., **S. E. Haydel**, R. F. Giese, Jr., and D. D. Eberl. 2008. Chemical and mineralogical characteristics of French green clays used for healing. *Clays Clay Miner.* In press.
- Williams, L. B. and **S. E. Haydel**. 2008. Evaluation of the medicinal use of clay minerals as antibacterial agents. *Intl. Geol. Rev.* Submitted.
- Williams, L. B., **S. E. Haydel**, R. E. Ferrell. 2008. Bentonite, band-aids, and borborygmi. *Elements.* Submitted.
- Haydel, S. E.**, L. Arteaga, and J. E. Clark-Curtiss. 2008. The *prpA* response regulator is essential for *Mycobacterium tuberculosis* viability. In preparation.

PUBLICATIONS (Reviews or book chapters):

- Clark-Curtiss, J. E. and **S. E. Haydel**. 2003. Molecular genetics of *Mycobacterium tuberculosis* pathogenesis. *Ann. Rev. Microbiol.* **57**:517-549.

INVITED PRESENTATIONS:

- Haydel, S. E.** Characterization of the *Mycobacterium tuberculosis* TrcR/TrcS two-component regulatory system. Washington University, Dept. of Biology, St. Louis, MO. November 8, 1999.
- Haydel, S. E.** Molecular and biochemical characterization of the *Mycobacterium tuberculosis* TrcR response regulator. Washington University School of Medicine, Infectious Diseases/Basic Microbiological Mechanisms Research Conference, St. Louis, MO. March 15, 2001.
- Haydel, S. E.** *Mycobacterium tuberculosis* two-component regulatory systems: focusing on the TrcR/TrcS system. Washington University, Dept. of Biology, Bioforum Seminar Series, St. Louis, MO. March 23, 2001.
- Haydel, S. E.** Global expression analysis of the *Mycobacterium tuberculosis* two-component regulators. Washington University School of Medicine, Infectious Diseases/Basic Microbiological Mechanisms Research Conference, St. Louis, MO. March 7, 2002.

Haydel, S. E. Mutagenesis of *Mycobacterium tuberculosis* two-component systems. Washington University School of Medicine, Infectious Diseases/Basic Microbiological Mechanisms Research Conference, St. Louis, MO. April 24, 2003.

Haydel, S. E. Molecular analysis of the *Mycobacterium tuberculosis* two-component system regulators. Washington University, Department of Biology, Bioforum Seminar Series, St. Louis, MO. October 1, 2004.

Haydel, S. E. Mycobacterial regulatory systems and pathogenesis. Arizona State University, School of Life Sciences Welcome Seminar, Tempe, AZ. September 16, 2005.

Haydel, S. E. Mycobacterial regulation and pathogenesis. Arizona State University Biodesign Institute External Advisory Board meeting, Tempe, AZ. November 1, 2006.

Haydel, S. E. and L. B. Williams. Broad-spectrum in vitro antibacterial activities of clay minerals against antibiotic-susceptible and antibiotic-resistant bacterial pathogens. Geological Society of America, Annual Meeting, Denver, CO. October 29, 2007.

Haydel, S. E. and L. B. Williams. Broad-spectrum antibacterial activities of clay minerals. American Chemical Society-Clay Minerals Society, National Meeting, New Orleans, LA. April 6-10, 2008.

ABSTRACTS (Oral Presentations):

Haydel, S. E., C. J. Greeson, W. H. Benjamin, Jr., and N. E. Dunlap. Characterization of the *Mycobacterium tuberculosis* TrcS sensor/histidine kinase. UAB Microbiology Departmental Research Retreat, Orange Beach, AL. November 15, 1997.

Haydel, S. E. Phosphorylation and autoregulation of the *Mycobacterium tuberculosis* TrcR/TrcS two-component system. Sigma Xi / UAB Graduate Student Research Day Competition, Birmingham, AL. April 30, 1999.

Haydel, S. E., N. E. Dunlap, and W. H. Benjamin, Jr. Autoregulation and target promoters of the *Mycobacterium tuberculosis* TrcR response regulator. Southeast Branch ASM, Jekyll Island, GA. October 28, 1999.

Haydel, S. E. Autoregulation and DNA binding characteristics of the *Mycobacterium tuberculosis* TrcR response regulator. Washington University Molecular Microbiology and Microbial Pathogenesis Departmental Retreat, Potosi, MO. November 4, 2000.

Williams, L. B., **S. E. Haydel,** D. D. Eberl. Chemical and mineralogical characteristics of French green clays used for healing. Geological Society of America, Annual Meeting, Denver, CO. October 29, 2007.

Haydel, S. E. and L. B. Williams. Broad-spectrum in vitro antibacterial activities of clay minerals against antibiotic-susceptible and antibiotic-resistant bacterial pathogens. Geological Society of America, Annual Meeting, Denver, CO. October 29, 2007.

Haydel, S. E. and L. B. Williams. Broad-spectrum antibacterial activities of clay minerals. American Chemical Society-Clay Minerals Society, National Meeting, New Orleans, LA. April 6-10, 2008.

ABSTRACTS (Poster Presentations):

Harris, R. H., **S. E. Haydel,** W. H. Benjamin, Jr., and N. E. Dunlap. Identification of response regulator genes in *Mycobacterium tuberculosis*. ASM General Meeting, Washington, DC. 1995.

- Haydel, S. E.**, R. H. Harris, W. H. Benjamin, Jr., and N. E. Dunlap. Identification of sensor gene fragments in *Mycobacterium tuberculosis*. IBC Mycobacterial Infection Conference, Washington, DC. 1996.
- Harris, R. H., Y. Huang, **S. E. Haydel**, W. H. Benjamin, Jr., and N. E. Dunlap. Construction of a *Mycobacterium tuberculosis* library and cloning of response regulator genes. IBC Mycobacterial Infection Conference, Washington, DC. 1996.
- Haydel, S. E.**, R. H. Harris, W. H. Benjamin, Jr., and N. E. Dunlap. Identification of a two-component regulatory system in *Mycobacterium tuberculosis*. ASM General Meeting., Miami Beach, FL. 1997.
- Haydel, S. E.**, C. J. Greeson, W. H. Benjamin, Jr., and N. E. Dunlap. Characterization of the *Mycobacterium tuberculosis* TrcS sensor/histidine kinase. Southeastern Branch ASM Meeting, Helen, GA. 1997.
- Haydel, S. E.**, N. E. Dunlap, and W. H. Benjamin, Jr. *In vitro* characterization of the *Mycobacterium tuberculosis* TrcR-TrcS two-component system. ASM General Meeting, Atlanta, GA. 1998.
- Haydel, S. E.**, N. E. Dunlap, and W. H. Benjamin, Jr. Autoregulation and characterization of the *Mycobacterium tuberculosis* *trcRS* two-component system. ASM General Meeting, Chicago, IL. 1999.
- Haydel, S. E.**, W. H. Benjamin, Jr., N. E. Dunlap, and J. E. Clark-Curtiss. Targeted promoters of the *Mycobacterium tuberculosis* TrcR response regulator. Keystone Meeting: Molecular and Cellular Aspects of Tuberculosis Research in the Post Genome Era, Taos, NM. 2001.
- Haydel, S. E.**, W. H. Benjamin, Jr., N. E. Dunlap, and J. E. Clark-Curtiss. DNA binding properties of the *Mycobacterium tuberculosis* TrcR response regulator. ASM General Mtg., Orlando, FL. 2001.
- Haydel, S. E.** and J. E. Clark-Curtiss. Global analysis of *Mycobacterium tuberculosis* two-component system regulators. World Congress on Tuberculosis, Washington, DC. 2002.
- Haydel, S. E.** and J. E. Clark-Curtiss. Global expression analysis of *Mycobacterium tuberculosis* two-component system regulators. Wind River Conference on Prokaryotic Biology, Estes Park, CO. 2002.
- Haydel, S. E.** and J. E. Clark-Curtiss. Construction and proteomic analysis of an *Mycobacterium tuberculosis* *trcRS* mutant. ASM General Meeting, Washington, DC. 2003.
- Haydel, S. E.** and J. E. Clark-Curtiss. Transcriptional repression of the *rv1057* gene by the *Mycobacterium tuberculosis* TrcR response regulator. ASM General Meeting, New Orleans, LA. 2004.
- Haydel, S. E.** and J. E. Clark-Curtiss. The *Mycobacterium tuberculosis* TrcR response regulator represses expression of the *rv1057* gene encoding a seven-bladed β -propeller. Keystone Meeting: Tuberculosis: Integrating Host and Pathogen Biology, Whistler, British Columbia. 2005.
- Williams, L. B., **S. E. Haydel**, and D. D. Eberl. Scientific validation of antibacterial minerals needed for public policy support. Geological Society of America, Vol. 38, No. 7, Abstract 111638. Philadelphia, PA. 2006.

Cotey, A. and **S. E. Haydel**. Antibacterial properties of natural clay minerals. ASU School of Life Sciences 15th Annual Undergraduate Research Poster Symposium. March 28, 2008.

Turner, A., C. Remenih, **S. E. Haydel**, and L. B. Williams. Comparing antibacterial clay properties in search of new medicinal applications. American Chemical Society-Clay Minerals Society, National Meeting, New Orleans, LA. April 6-10, 2008.

Borchardt, T. and **S. E. Haydel**. Assessing the physicochemical properties of antibacterial clay minerals. American Chemical Society-Clay Minerals Society, National Meeting, New Orleans, LA. April 6-10, 2008.

Borchardt, T. and **S. E. Haydel**. Assessing the physicochemical properties of antibacterial clay minerals. Arizona-Southern Nevada ASM Annual Meeting, Tempe, AZ. April 12, 2008.

PUBLIC OUTREACH AND RECOGNITION:

“ASU researchers test antibacterial effects of healing clays: National Institutes of Health fund humanitarian response.” ASU College of Liberal Arts and Science News Release.
http://clas.asu.edu/newsevents/newsreleases/2006/WilliamsHaydelResearch_11012006.htm.
November 1, 2006.

“ASU researchers test antibacterial effects of healing clays: National Institutes of Health fund humanitarian response.” ASU School of Life Sciences.
http://sols.asu.edu/sols_news/43_news_06.php. November 1, 2006.

“Researchers mold clay into potential therapy.” ASU home web page.
http://www.asu.edu/news/features/archive_fall06.htm. November 2, 2006.

“Move over, penicillin: Researchers mold clay into potential therapy.” ASU Insight newspaper.
http://www.asu.edu/news/stories/200611/20061102_clay.htm, November 2, 2006.

“Clays heal skin disease: Researchers study healing properties of old French remedy.” ASU State Press student newspaper. <http://www.asuwebdevil.com/issues/2006/11/06/news/698684>.
November 5, 2006.

“Clay...the next topical penicillin?” ASU Research Magazine, Magazine of Scholarship and Creative Activity at ASU, Winter 2006 edition, p. 7.

“Bacteria beware! Novel technologies could knockout old enemies.”
ASU School of Life Sciences Newsletter, Spring 2007, Volume 3, No. 1, p. 16-17.

“Researchers delve into antibacterial properties of particular French clays.”
Microbe, The News Magazine of the American Society for Microbiology, February 2007, Vol. 2, No. 2.

“Antibacterial effects of healing clays.” 2007. Geology Today. News and Comment. 23(2):51.

“Healing clay.” ASU Research Magazine, Magazine of Scholarship and Creative Activity at ASU, Spring/Summer 2007 edition, p. 20-23.

“Antibacterial clays.” Medstar Television interview/production of a 2-minute health news segment for nationwide ABC network affiliates. June 2007.

- “Drugstore in the dirt.” The Geological Society of America News Release.
<http://www.geosociety.org/news/pr/07-58.htm>. October 25, 2007.
- “The dirt on curing clays.” Discovery News. <http://dsc.discovery.com/news/2007/10/25/clay-cure-bacteria.html>. October 25, 2007.
- “Scientists find dirty way to kill bacteria.” The Washington Times.
<http://www.washingtontimes.com/article/20071026/NATION/110260077/1002/NATION>.
October 26, 2007.
- “French clay can kill MRSA and ‘flesh-eating’ bacteria.” Science Daily.
<http://www.sciencedaily.com/releases/2007/10/071025120514.htm>. October 26, 2007.
- “French muck: is this the new penicillin?” The London Independent.
<http://news.independent.co.uk/health/article3104663.ece>. October 28, 2007.
- “Watch out hand sanitizer. Clay kills bacteria too.” Science Friday.
<http://www.sciencefriday.com/newsbriefs/read/152>. November 2, 2007.
- “Clay that kills: ground yields antibacterial agents.” Science News. Vol. 172, No. 18, p. 276.
<http://www.sciencenews.org/articles/20071103/fob4.asp>. November 3, 2007.
- “How Do You Stop Flesh-Eating Bacteria? Apply Some Clay.” Scientific American.
<http://www.sciam.com/article.cfm?SID=mail&articleID=264E90CF-E7F2-99DF-3457F4A15A6235B9&chanID=sa003>. November 9, 2007.
- Reader’s Digest interview for Medical Breakthrough story on antibacterial clay minerals. December 20, 2007.
- MicrobeWorld Radio interview for 90-second radio feature on antibacterial clay minerals. Finger Lakes Productions International for the American Society of Microbiology. January 25, 2008.
- “Miracle muds.” Geotimes Magazine, 2008. Volume 53, No. 2. Published by the American Geological Institute. February 2008.
- “Healing clays show promise for fighting deadly MRSA superbug infections, other diseases.” American Chemical Society Press Release. April 6, 2008.
- “Mud harnessed to fight infection.” HealthDay, NY Times syndicate. Featured in The Washington Post, Yahoo News, and U.S. News & World Report. April 6, 2008. <http://www.healthday.com/Article.asp?AID=614228>
- “Feat of clay: Certain types kill bacteria.” USA Today. April 6, 2008.
www.usatoday.com/news/health/2008-04-06-medical-clay_N.htm?loc=interstitialskip
- “ASU professors study healing potential of clay.” The Arizona Republic. Front page story, top of fold. April 7, 2008.
<http://www.azcentral.com/community/tempe/articles/2008/04/07/20080407claycure0407.html>

- “Alligators could help fight MRSA.” The Daily Telegraph, London. April 7, 2008.
<http://www.telegraph.co.uk/earth/main.jhtml?xml=/earth/2008/04/07/scigators107.xml>
- “Clays hold promise in fight against infections.” Arizona State University News. Featured on the
www.asu.edu home page. April 7, 2008. http://asunews.asu.edu/20080409_healingclay
- “New attack on deadly bacteria?” The Why Files. April 10, 2008. http://whyfiles.org/277new_antibio/
- “Healing clays may help fight diseases.” The Times of India. April 13, 2008.
http://timesofindia.indiatimes.com/Healing_clays_may_help_fight_diseases/articleshow/2949087.cms
- ReachMD Radio program interview discussing the antibacterial clay minerals. Will be broadcasted on
Satellite radio XM157. April 24, 2008.
- “Quest for new antibiotics leads to novel sources.” American Medical Association News. May 5,
2008. <http://www.ama-assn.org/amednews/2008/05/05/hlsc0505.htm>
- “Healing clays.” Chemical & Engineering News, April 28, 2008. Volume 86, No. 17. Published by
the American Chemical Society.