

## CURRICULUM VITAE: Tina M. Henkin

**TITLE:** Professor and Chair, Department of Microbiology  
Robert W. and Estelle S. Bingham Professor of Biological Sciences

**ADDRESS:** Department of Microbiology  
Ohio State University  
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**PLACE OF BIRTH:** Philadelphia, PA

**MARITAL STATUS:** Married, 1 child born 1995

### EDUCATION:

1977 B.A., Biology, Swarthmore College, Swarthmore, PA,  
Undergraduate Research Advisor: Dr. Steven Takats,  
Department of Biology, Temple University. Philadelphia, PA

1984 Ph.D., Genetics, University of Wisconsin, Madison, WI  
Advisor: Dr. Glenn H. Chambliss, Department of Bacteriology.  
Thesis title: Genetic analysis of a streptomycin-resistant, oligosporogenous  
mutant of *Bacillus subtilis*

1984-1987 Post-doc, Molecular Biology and Microbiology, Tufts University Medical School,  
Boston, MA  
Advisor: Dr. Abraham L. Sonenshein  
Topic: Promoter structure in *Bacillus subtilis*

### PROFESSIONAL EXPERIENCE:

2009-present **Chair, Department of Microbiology**, Ohio State University, Columbus,  
OH

2009-present **Robert W. and Estelle S. Bingham Professor of Biological Sciences**,  
Ohio State University, Columbus, OH

2000-present Professor, Microbiology, Ohio State University, Columbus, OH

1995-2000 Associate Professor, Microbiology, Ohio State University, Columbus, OH

2003-present Member, Ohio State Biochemistry Program, Ohio State University, Columbus, OH

1995-present Member, Molecular, Cellular and Developmental Biology Program, Ohio State  
University, Columbus, OH

1995-present Member, RNA Group, Ohio State University, Columbus, OH

1992-1995 Associate Professor, Biochemistry and Molecular Biology, Albany Medical College,  
Albany, NY

1992 Associate Professor, Biochemistry and Molecular Biology  
Louisiana State University Medical Center-Shreveport

1987-1992 Assistant Professor, Biochemistry and Molecular Biology  
Louisiana State University Medical Center-Shreveport

## RESEARCH INTERESTS:

Mechanisms of gene regulation, transcriptional and post-transcriptional control, RNA structure/function, microbial physiology, RNA recognition of small molecules, riboswitch RNAs, antibiotic development

## HONORS:

Simon Muhr Scholarship, City of Philadelphia, Swarthmore College, 1973-1977  
Venture Fund Fellowship for off-campus research, Swarthmore College, 1976-1977  
National Institutes of Health Predoctoral Trainee, University of Wisconsin, 1977-1980  
American Cancer Society Junior Faculty Research Award, 1988-1991  
Editorial Board, Journal of Bacteriology  
Editorial Advisory Board, Molecular Microbiology  
**Member, National Institutes of Health Microbial Physiology and Genetics Study Section MBC-2, 1997-2001**  
Member, Faculty of 1000 On-line Review Service, 2001-present  
**Fellow, American Academy of Microbiology, 2003-present**  
**Distinguished Scholar Award, Ohio State University, 2004**  
Charles F. Adair Distinguished Alumnus Lecturer in Bacteriology, University of Wisconsin-Madison, 2004  
Stone Lecturer in Biochemistry and Molecular Biology, Penn State University, 2005  
**Co-Organizer, Molecular Genetics of Bacteria and Phages meeting, 2004-2006**  
Chair-Elect, American Society for Microbiology, Division H, 2004-2005  
**Chair, American Society for Microbiology, Division H, 2005-2006**  
Division Advisor, American Society for Microbiology, Division H, 2006-2007  
**Fellow, American Association for the Advancement of Science, 2005-present**  
**American Society for Microbiology Branch Lecturer, American Society for Microbiology, 2006-2008**  
**National Academies of Science Pfizer Prize in Molecular Biology, 2006**  
**Distinguished Professor, College of Biological Sciences, Ohio State University, 2007-2009**  
**American Society for Microbiology Division H Lecturer, 2007**  
Distinguished Microbiology Lecturer, Miami University, Oxford, OH, 2008  
**Scientific Advisory Panel, Howard Hughes Medical Institute, 2008**  
**Member, National Institutes of Health Prokaryotic Cell and Molecular Biology (PCMB) Study Section, 2009-2013**  
**Robert W. and Estelle S. Bingham Professor of Biological Sciences, 2009-present**  
**Fellow, American Academy of Arts & Sciences, 2009-present**  
**RNA Theme Leader, American Society for Biochemistry and Molecular Biology, 2011**  
**Co-Editor, Gene Regulation Theme Issue, Current Opinion for Microbiology, 2011**  
**Editorial Board, Annual Review of Genetics, 2011-present**  
Whitely Lecturer in Microbiology, University of Washington, 2011

## TEACHING EXPERIENCE:

Organismal Biology, Swarthmore College, 1977 (lab instructor)  
Introductory Genetics, University of Wisconsin, 1979 (teaching assistant)  
Bacterial Physiology, University of Wisconsin, 1983 (lab instructor)  
Medical Microbiology, Tufts University Medical School, 1985-1986 (lab instructor)

Molecular Biology, Tufts University Medical School, 1985-1986 (teaching assistant)  
 Medical Biochemistry, LSU Medical Center, 1987-1991 (lecturer)  
 Molecular Biology of Prokaryotes, LSU Medical Center, 1988-1992 (course director)  
 Bacteriophage Molecular Biology, LSU Medical Center, 1988, 1990 (course director)  
 Medical Biochemistry, Albany Medical College, 1993-1994 (lecturer)  
 Medical Microbiology, Albany Medical College, 1993 (lecturer)  
 Graduate Biochemistry, Albany Medical College, 1993-1994 (lecturer)  
 Molecular Biology and Genetics, Albany Medical College, 1993-1994 (course coordinator)  
 Molecular Mechanisms of Microbial Metabolic Regulation, Albany Medical College, 1994  
 (course director)  
 Experimental Approaches to Biochemistry, Albany Medical College, 1994-1995 (lecturer)  
 Micro 680: Advanced Microbial Genetics, Ohio State University, 1996-2008 (course director)  
 Micro 520: General Microbiology, Ohio State University, 1997-2002 (course co-director)  
 Micro 661: Microbial Physiology, Ohio State University, 1995, 1997, 1999, 2000 (lecturer,  
 course co-director)  
 Micro 760: Advanced Bacterial Physiology, Ohio State University, 1996, 1998-2000 (lecturer)  
 Micro 720: Microbial Diversity, Ohio State University, 1997-8, 2000-2002 (lecturer)  
 Microbial Physiology Summer Course, Ohio State University, 1996-1998 (module co-director)  
 Graduate Seminar, Molecular, Cellular and Developmental Biology Program, 1999 (course  
 coordinator)  
 Graduate Seminar, Ohio State Biochemistry Program, 2004 (course coordinator)  
 Mentoring Course for First Year Graduate Students in MCDB, OSBP and Biophysics, 2004-2011  
 (team teaching)  
 Graduate Student Seminar in RNA Biology, Ohio State Biochemistry Program, 2005-2006  
 (course co-director)  
 Micro 694/702: Microbial Physiology Meets Pathogenesis, 2010-12 (course co-director)  
 Micro 521: General Microbiology 2, 2011-2012 (course director/course co-director)

## RESEARCH SUPPORT:

11/87-10/88: American Cancer Society Award, Louisiana State University Medical Center, \$7,500  
 7/88-6/89: Edward P. Stiles Trust Fund Research Award, \$10,000  
 7/88-8/94: **National Institutes of Health R29**, "Regulation of ribosome protein synthesis in  
*Bacillus subtilis*," \$349,000 total direct costs - Principal Investigator  
 7/88-6/91: **American Cancer Society Junior Faculty Research Award**, \$90,500 total direct  
 costs - Principal Investigator  
 7/88-6/90: American Cancer Society Research Award, "Regulation of ribosome protein synthesis  
 in *Bacillus subtilis*," \$138,000 total direct costs, declined because of overlap  
 10/91-9/92: Intramural Research Award, Louisiana State University Medical Center, \$8,000  
 1/92-12/92: Center for Excellence in Cancer Research Award, LSU Medical Center, \$10,000  
 12/93-11/97: **National Institutes of Health R01 GM47823**, "Regulation of *B. subtilis* tyrosyl-tRNA  
 synthetase," \$350,000 total direct costs - Principal Investigator  
 6/95-5/96: **Cubist Pharmaceuticals**, "T-box genes in Gram(+) pathogens," \$45,000 direct costs  
 - Principal Investigator  
 6/96-11/97: **National Institutes of Health Minority Undergraduate Research Supplement**,  
 \$15,500 direct costs – Principal Investigator  
 9/97-8/01: **National Sciences Foundation**, "Carbon catabolite regulation in *B. subtilis*,"  
 \$360,000 total direct costs - Principal Investigator  
 1/98-12/02: **National Institutes of Health R01 GM47823**, "Regulation of *B. subtilis* tyrosyl-tRNA  
 synthetase," \$570,860 total direct costs (competitive renewal) - Principal

Investigator

4/98-3/00: **National Institutes of Health Postdoctoral Fellowship** for Margaret Haldeman, \$60,000 total direct costs

3/99-2/00: **National Institutes of Health**, "Regulation of *B. subtilis* tyrosyl-tRNA synthetase," **Supplement** for NMR analysis of RNA structure, \$49,850 direct costs - Principal Investigator. Collaborator, Jennifer Hines, Division of Medicinal Chemistry, College of Pharmacy, Ohio State University

10/00-9/03: **National Institutes of Health Predoctoral Fellowship** for Brooke Murphy McDaniel, \$72,429 total direct costs

8/01-7/05: **National Institutes of Health R01 GM63615**, "Regulation of methionine metabolism in *Bacillus subtilis*," \$700,000 total direct costs, Principal Investigator

10/04-7/05 **National Institutes of Health Minority Graduate Student Supplement** (Sharnise Wilson), \$33,529 direct costs

9/02-12/07 **National Institutes of Health R01 GM47823**, "Regulation of *B. subtilis* tyrosyl-tRNA synthetase," \$800,000 total direct costs - Principal Investigator

10/04-12/07 **National Institutes of Health Minority Graduate Student Supplement** (Nicholas Green), \$160,000 total direct costs

12/04-10/05 **Technology Action Fund, Southeastern Ohio Science and Technology Commercialization Initiative**, Battelle Memorial Institute, "Novel Anti-Infective Compounds Targeting the T Box Antitermination System," \$35,000

1/06-12/10 **National Institutes of Health Minority Predoctoral Fellowship F31 GM076894** for Sharnise Wilson, "Lysine recognition by lysine-binding regulatory RNAs," \$160,000 total direct costs

4/06-3/10 **National Institutes of Health R01 GM63615**, "Regulation of methionine metabolism in *Bacillus subtilis*," \$750,000 total direct costs, Principal Investigator (competitive renewal); ARRA supplement, 9/09-3/11, \$185,000 total direct costs

2/07-1/13: **National Institutes of Health R01 GM73188**, "Targeting a novel regulatory RNA with novel antibiotics," \$2,062,330 total direct costs (4 years), \$365,000 total direct costs for Henkin lab; Co-Investigator; J. Hines, Ohio University, Principal Investigator (in no cost extension until 1/13)

3/09-2/13: **National Institutes of Health R01 GM47823**, "Regulation of *B. subtilis* tyrosyl-tRNA synthetase," \$972,000 total direct costs, Principal Investigator (competitive renewal)

4/10-3/14 **National Institutes of Health R01 GM63615**, "Regulation of methionine metabolism in *Bacillus subtilis*," \$860,000 total direct costs, Principal Investigator (competitive renewal)

## PUBLICATIONS:

1. **Henkin, T. M.**, K. M. Campbell and G. H. Chambliss. 1979. Spectinomycin dependence in *Bacillus subtilis*. J. Bacteriol. **137**:1452-1455.
2. **Henkin, T. M.**, K. M. Campbell and G. H. Chambliss. 1981. Revertants of a streptomycin-resistant mutant of *Bacillus subtilis*, p. 205-208. In: H. S. Levinson, A. L. Sonenshein and D. J. Tipper, ed., Sporulation and germination. American Society for Microbiology, Washington, D.C.
3. **Henkin, T. M.**, K. M. Campbell and G. H. Chambliss. 1982. Revertants of a streptomycin-

resistant, oligosporogenous mutant of *Bacillus subtilis*. Mol. Gen. Genet. **186**:347-354.

4. Chambliss, G.H, **T. M. Henkin** and J. M. Leventhal. 1983. Bacterial in vitro protein synthesizing systems. Methods Enzymol. **101**:598-605.

5. **Henkin, T. M.** and G. H. Chambliss. 1984. Genetic analysis of a streptomycin-resistant, oligosporogenous mutant of *Bacillus subtilis*. J. Bacteriol. **157**:202-210.

6. **Henkin, T. M.** and G. H. Chambliss. 1984. Genetic mapping of a mutation causing an alteration in *Bacillus subtilis* ribosomal protein S4. Mol. Gen. Genet. **193**:364-369.

7. Anderson, L. M., **T. M. Henkin**, G. H. Chambliss and K. F. Bott. 1984. A new chloramphenicol resistance locus in *Bacillus subtilis*. J. Bacteriol. **158**:386-388.

8. Duvall, E. J., S. Mongkulsuk, U. J. Kim, P. S. Lovett, **T. M. Henkin** and G. H. Chambliss. 1985. Induction of the chloramphenicol acetyltransferase gene *cat-86* through the action of the ribosomal antibiotic ampicillin: involvement of a *Bacillus subtilis* ribosomal component in *cat* induction. J. Bacteriol. **161**:665-672.

9. **Henkin, T. M.** and A. L. Sonenshein. 1987. Mutations of the *Escherichia coli lacUV5* promoter resulting in increased expression in *Bacillus subtilis*. Mol. Gen. Genet. **209**:467-474.

10. Nicholson, W. L., Y. K. Park, **T. M. Henkin**, M. Won, M. J. Weickert, J. A. Gaskell and G. H. Chambliss. 1987. Catabolite repression-resistant mutations of the *Bacillus subtilis* alpha-amylase promoter affect transcription levels and are in an operator-like sequence. J. Mol. Biol. **198**:609-618.

11. **Henkin, T. M.**, C. E. Donnelly and A. L. Sonenshein. 1988. Mutations in the spacer region of a *Bacillus subtilis* promoter, p. 63-67. In: A. T. Ganesan and J. A. Hoch (ed.), Genetics and biotechnology of bacilli. Academic Press, San Diego, CA.

12. **Henkin, T. M.**, S. H. Moon, L. C. Mattheakis and M. Nomura. 1989. Cloning and analysis of the *spc* ribosomal protein operon of *Bacillus subtilis*: comparison with the *spc* operon of *Escherichia coli*. Nucleic Acids Res. **17**:7469-7486.

13. Grundy, F. J. and **T. M. Henkin**. 1990. Cloning and analysis of the *Bacillus subtilis rpsD* gene, encoding ribosomal protein S4. J. Bacteriol. **172**:6372-6379.

14. **Henkin, T. M.**, G. H. Chambliss and F. J. Grundy. 1990. *Bacillus subtilis* mutants with alterations in ribosomal protein S4. J. Bacteriol. **172**:6380-6385.

15. **Henkin, T. M.**, F. J. Grundy, W. L. Nicholson and G. H. Chambliss. 1991. Catabolite repression of alpha-amylase gene expression in *Bacillus subtilis* involves a *trans*-acting gene product homologous to the *Escherichia coli lacI* and *galR* repressors. Mol. Microbiol. **5**:575-584.

16. Grundy, F. J. and **T. M. Henkin**. 1991. The *rpsD* gene, encoding ribosomal protein S4, is autogenously regulated in *Bacillus subtilis*. J. Bacteriol. **173**:4595-4602.

17. Grundy, F. J. and **T. M. Henkin**. 1992. Characterization of the *Bacillus subtilis rpsD* regulatory target site. J. Bacteriol. **174**:6763-6770.

18. **Henkin, T. M.**, B. L. Glass and F. J. Grundy. 1992. Analysis of the *Bacillus subtilis* *tyrS* gene: conservation of a regulatory sequence in multiple tRNA synthetase genes. *J. Bacteriol.* **174**:6763-6770.
19. **Henkin, T. M.** 1993. *Bacillus* ribosomal structure and genetics, p. 669-682. *In*: A. L. Sonenshein, J. A. Hoch and R. Losick (ed.), *Bacillus subtilis* and other Gram-positive bacteria: physiology, biochemistry and molecular biology. American Society for Microbiology, Washington, DC. (invited review)
20. Grundy, F. J. and **T. M. Henkin**. 1993. tRNA as a positive regulator of transcription antitermination in *B. subtilis*. *Cell* **74**:475-482. PMID: 8348614
21. Grundy, F. J., D. A. Waters, T. Y. Takova and **T. M. Henkin**. 1993. Identification of genes involved in utilization of acetate and acetoin in *Bacillus subtilis*. *Mol. Microbiol.* **10**:259-271.
22. Grundy, F. J., D. A. Waters, S. H. G. Allen and **T. M. Henkin**. 1993. Regulation of the *Bacillus subtilis* acetate kinase gene by CcpA. *J. Bacteriol.* **175**:7348-7355.
23. Grundy, F. J. and **T. M. Henkin**. 1994. Conservation of a transcription antitermination mechanism in aminoacyl-tRNA synthetase and amino acid biosynthesis genes in Gram-positive bacteria. *J. Mol. Biol.* **235**:798-804.
24. Grundy, F. J., S. M. Rollins and **T. M. Henkin**. 1994. Interaction between the acceptor end of tRNA and the T box stimulates antitermination in the *Bacillus subtilis* *tyrS* gene: a new role for the discriminator base. *J. Bacteriol.* **176**:4518-4526.
25. Henkin, T. M. 1994. tRNA-directed transcription antitermination. *Mol. Microbiol.* **13**:381-387. (invited review)
26. Grundy, F. J. and **T. M. Henkin**. 1994. Inducible amber suppressor for *Bacillus subtilis*. *J. Bacteriol.* **176**:2108-2110.
27. Grundy, F. J., A. J. Turinsky and **T. M. Henkin**. 1994. Catabolite regulation of *Bacillus subtilis* acetate and acetoin utilization genes by CcpA. *J. Bacteriol.* **176**:4527-4533.
28. **Henkin, T. M.** 1996. The role of the CcpA transcriptional regulator in carbon metabolism in *Bacillus subtilis*. *FEMS Microbiol. Lett.* **135**:9-15. (invited review)
29. **Henkin, T. M.** 1996. Control of transcription termination in prokaryotes. *Ann. Rev. Genetics* **30**:35-57. (invited review)
30. Grundy, F. J., S. E. Hodil, S. M. Rollins and **T. M. Henkin**. 1997. Specificity of tRNA-mRNA interactions in *Bacillus subtilis* *tyrS* antitermination. *J. Bacteriol.* **179**: 2587-2594. PMID: 9098057
31. Grundy, F. J., M. T. Haldeman, G. M. Hornblow, J. M. Ward, A. F. Chalker and **T. M. Henkin**. 1997. The *Staphylococcus aureus* *ileS* gene, encoding isoleucyl-tRNA synthetase, is a member of the T box family. *J. Bacteriol.* **179**:3767-3772.
32. Rollins, S. M., F. J. Grundy and **T. M. Henkin**. 1997. Analysis of *cis*-acting sequence and structural elements required for antitermination of the *Bacillus subtilis* *tyrS* gene. *Mol. Microbiol.*

25:411-421. PMID: 9282752

33. Curnow, A. W., K.-W. Hong, R. Yuan, S.-I. Kim, O. Martins, W. Winkler, **T. M. Henkin** and D. Soll. 1997. Glu-tRNA-Gln amidotransferase: a novel heterotrimeric enzyme required for correct decoding of glutamine codons during translation. *Proc. Natl. Acad. Sci. USA* **94**:11819-11826. PMID: 9342321
34. Grundy, F. J. and **T. M. Henkin**. 1998. The S box regulon: a new global transcription termination control system for methionine and cysteine biosynthesis genes in Gram-positive bacteria. *Mol. Microbiol.* **30**:737-750.
35. Turinsky, A. J., F. J. Grundy, J.-H. Kim, G. H. Chambliss and **T. M. Henkin**. 1998. Transcriptional activation of the *Bacillus subtilis* *ackA* gene requires sequences upstream of the promoter. *J. Bacteriol.* **180**:5961-5967.
36. Matsuno, K., T. Blais, A. W. Serio, T. Conway, **T. M. Henkin** and A. L. Sonenshein. 1999. Metabolic imbalance and sporulation in an isocitrate dehydrogenase mutant of *Bacillus subtilis*. *J. Bacteriol.* **181**:3382-3391.
37. Grundy, F. J. and **T. M. Henkin**. 1999. A regulatory system hitherto found only in Gram-positive bacteria in a Gram-negative bacterium which grows only in co-culture with a *Bacillus* strain. *Mol. Microbiol.* **33**:667-668.
38. **Henkin, T. M.** 2000. Transcription termination control in bacteria. *Curr. Opin. Microbiol.* **3**:149-153. (invited review)
39. Grundy, F. J., J. C. Collins, S. M. Rollins and **T. M. Henkin**. 2000. tRNA determinants for transcription antitermination of the *Bacillus subtilis* *tyrS* gene. *RNA* **6**:1131-1141. PMID: 10943892
40. Turinsky, A. J., T. Moir-Blais, F. J. Grundy and **T. M. Henkin**. 2000. *Bacillus subtilis* *ccpA* mutants specifically defective in activation of acetoin biosynthesis. *J. Bacteriol.* **182**:5611-5614.
41. **Henkin, T. M.** 2001. Attenuation, Transcriptional. *In*: S. Brenner and J. H. Miller (ed.), "Encyclopedia of Genetics," Academic Press. (invited chapter)
42. Moir-Blais, T. R., F. J. Grundy, and **T. M. Henkin**. 2001. Transcriptional activation of the *Bacillus subtilis* *ackA* promoter requires sequences upstream of the CcpA binding site. *J. Bacteriol.* **183**:2389-2393.
43. Winkler, W. C., F. J. Grundy, B. A. Murphy, and **T. M. Henkin**. 2001. The GA motif: An RNA element common to bacterial antitermination systems, rRNA, and eukaryotic RNAs. *RNA* **7**:1165-1172. PMID: 11497434
44. **Henkin, T. M.** 2002. Ribosomes, protein synthesis factors and tRNA synthetases, p. 313-322. *In* A. L. Sonenshein, J. A. Hoch and R. Losick, ed., "*Bacillus subtilis* and its relatives: from genes to cells," American Society for Microbiology, Washington, D. C. (invited review)
45. Grundy, F. J., and **T. M. Henkin**. 2002. Biosynthesis of serine, glycine, cysteine and methionine, p. 245-254. *In* A. L. Sonenshein, J. A. Hoch and R. Losick, ed., "*Bacillus subtilis* and its closest relatives: from genes to cells," American Society for Microbiology, Washington, D. C.

(invited review)

46. **Henkin, T. M.** 2002. Transcription termination control in bacteria, p. 169-181. *In*: Hodgson, D. A. and C. M. Thomas, "SGM Symposium 61: Signals, switches, regulons and cascades: control of bacterial gene expression." Cambridge University Press. (invited review)
47. Murphy, B. A., F. J. Grundy and **T. M. Henkin.** 2002. Prediction of gene function in methylthioadenosine recycling from regulatory signals. *J. Bacteriol.* **185**:2314-2318. PMID: 11914366
48. Gerdeman, M. S., **T. M. Henkin** and J. V. Hines. 2002. In vitro structure-function studies of the *Bacillus subtilis* *tyrS* antiterminator: Evidence for factor-independent tRNA acceptor stem binding specificity. *Nucl. Acids Res.* **30**:1065-1072.
49. Grundy, F. J., T. R. Moir, M. T. Haldeman and **T. M. Henkin.** 2002. Sequence requirements for terminators and antiterminators in the T box transcription antitermination system: disparity between conservation and functional requirements. *Nucl. Acids Res.* **30**:1646-1655.
50. **Henkin, T. M.** and C. Yanofsky. 2002. Regulation by transcription attenuation in bacteria: How RNA provides instructions for transcription termination/antitermination decisions. *Bioessays* **24**:700-707. (invited review) PMID: 12210530
51. Grundy, F. J., W. C. Winkler and **T. M. Henkin.** 2002. tRNA-mediated transcription antitermination *in vitro*: codon-anticodon pairing independent of the ribosome. *Proc. Natl. Acad. Sci. USA* **99**:11121-11126. PMID: 12165569
52. Grundy, F. J. and **T. M. Henkin.** 2003. The T box and S box transcription termination control systems. *Front. Biosci.* **8**:D20-31. (invited review) PMID: 12456320
53. Gerdeman, M. S., **T. M. Henkin** and J. V. Hines. 2003. Solution structure of the *B. subtilis* T box antiterminator RNA: Seven-nucleotide bulge characterized by stacking and flexibility. *J. Mol. Biol.* **326**:189-201. PMID: 12547201
54. McDaniel, B. A. M., F. J. Grundy, I. Artsimovitch and **T. M. Henkin.** 2003. Transcription termination control of the S box system: Direct measurement of S-adenosylmethionine by the leader RNA. *Proc. Natl. Acad. Sci. USA.* **100**:3083-3088. PMID: 12626738
55. Yousef, M. R., F. J. Grundy and **T. M. Henkin.** 2003. tRNA requirements for *glyQS* antitermination: A new twist on tRNA. *RNA* **9**:1148-1156. PMID: 12923262
56. Grundy, F. J., S. C. Lehman and **T. M. Henkin.** 2003. The L box regulon: Lysine sensing by leader RNAs of bacterial lysine biosynthesis genes. *Proc. Natl. Acad. Sci. USA* **100**:12057-12062. PMID: 14523230
57. Grundy, F. J. and **T. M. Henkin.** 2004. Regulation of gene expression by effectors that bind to RNA. *Curr. Opin. Microbiol.* **7**:126-131. (invited review) PMID: 15063848
58. Ito, M., D. B. Hicks, **T. M. Henkin**, A. A. Guffanti, B. Powers, L. Zvi, K. Uematsu and T. A. Krulwich. 2004. MotPS is the stator-force generator for motility of alkaliphilic *Bacillus* and its

homologue is a second functional Mot in *Bacillus subtilis*. Mol. Microbiol. **53**:1035-1049. PMID: 15306009

59. Grundy, F. J. and **T. M. Henkin**. 2004. Kinetic analysis of tRNA-directed transcription antitermination of the *Bacillus subtilis* *glyQS* gene in vitro. J. Bacteriol. **186**:5392-5399. PMID: 15292140

60. **Henkin, T. M.** 2004. Regulation of aminoacyl-tRNA synthetase gene expression in bacteria, p. 309-313. In: Ibba, M., C. Francklyn and S. Cusack (eds.), "The aminoacyl-tRNA synthetases." Landes Bioscience. (invited review).

61. Grundy, F. J., M. R. Yousef and **T. M. Henkin**. 2005. Monitoring uncharged tRNA during transcription of the *Bacillus subtilis* *glyQS* gene. J. Mol. Biol. **346**: 73-81. PMID: 15663928

62. Yousef, M. R., F. J. Grundy and **T. M. Henkin**. 2005. Structural transitions induced by the interaction between tRNA<sup>Gly</sup> and the *Bacillus subtilis* *glyQS* T box leader RNA. J. Mol. Biol. **349**:273-287. PMID: 15890195

63. McDaniel, B. A. M., F. J. Grundy and **T. M. Henkin**. 2005. A tertiary structural element in S box leader RNAs is required for SAM-directed transcription termination. Mol. Microbiol. **57**:1008-1021. PMID: 16091040

64. Fuchs, R. T., F. J. Grundy and **T. M. Henkin**. 2006. The S<sub>MK</sub> box is a new SAM binding RNA element that regulates translation of bacterial SAM synthetase genes. Nature Struct. Mol. Biol. **13**:226-233. PMID: 16491091

65. Terahara, N., M. Fujisawa, B. Powers, **T. M. Henkin**, T. A. Krulwich and M. Ito. 2006. An intergenic stem-loop mutation in the *Bacillus subtilis* *ccpA-motPS* operon increases *motPS* transcription and the MotPS contribution to motility. J. Bacteriol. **188**:2701-2705. PMID: 16547058

66. McDaniel, B. A. M., F. J. Grundy, V. Kurlekar, J. Tomsic and **T. M. Henkin**. 2006. Identification of a mutation in the *Bacillus subtilis* SAM synthetase gene that results in derepression of S box gene expression. J. Bacteriol. **188**:3674-3681. PMID: 16672621

67. Gardner, J. G., F. J. Grundy, **T. M. Henkin** and J. C. Escalante-Semerena. 2006. Control of acetyl-CoA synthetase (AcsA) activity by acetylation/deacetylation without NAD<sup>+</sup> involvement in *Bacillus subtilis*. J. Bacteriol. **188**:5460-5468. PMID: 16855235

68. Nelson, A., **T. M. Henkin** and P. F. Agris. 2006. tRNA regulation of gene expression: interaction of an mRNA 5'-UTR with a regulatory tRNA. RNA **12**:1254-1261. PMID: 16741230

69. Young, R., **T. M. Henkin** and C. L. Turnbough, Jr. 2006. The Phage Meeting: classical venue, new momentum. J. Bacteriol. **188**:4597-4600 (meeting review). PMID: 16788167

70. Grundy, F. J. and **T. M. Henkin**. 2006. From ribosome to riboswitch: control of gene expression in bacteria by RNA structural rearrangements. Crit. Rev. Biochem. Mol. Biol. **41**:329-338. (invited review) PMID: 17092822

71. **Henkin, T. M.** and F. J. Grundy. 2006. Sensing metabolic signals with nascent RNA transcripts: The T box and S box riboswitches as paradigms. Cold Spring Harbor Symp. Quant. Biol. **71**:231-237. (invited review) PMID: 17381302
72. Fuchs, R. T., F. J. Grundy and **T. M. Henkin**. 2007. S-adenosylmethionine directly inhibits binding of 30S ribosomal subunits to the S<sub>MK</sub> box riboswitch RNA. Proc. Natl. Acad. Sci. USA. **104**:4876-4880. PMID: 17360376
73. Ataide, S., S. Wilson, T. Rogers, S. Dang, B. Roy, R. Banerjee, **T. M. Henkin** and M. Ibba. 2007. Mechanisms of resistance to an amino acid antibiotic that targets translation. ACS Chem. Biol. **2**:819-827. PMID: 18154269
74. Tomsic, J., B. A. McDaniel, F. J. Grundy and **T. M. Henkin**. 2008. Natural variability in SAM-dependent riboswitches: S box elements in *Bacillus subtilis* exhibit differential sensitivity to SAM in vivo and in vitro. J. Bacteriol. **190**:823-833. PMID 18039762
75. Ontiveros-Palacios, A. M. Smith, F. J. Grundy, M. Soberon, **T. M. Henkin** and J. Miranda-Rios. 2008. Molecular basis for thiamin pyrophosphate recognition and gene regulation by the THI-box riboswitch. Mol. Microbiol. **67**:793-803. PMID: 18179415
76. Anupan, R., S. C. Bergmeier, N. J. Green, F. J. Grundy, **T. M. Henkin**, J. A. Means, A. Nayek, and J. V. Hines. 2008. 4,5-Disubstituted oxazolidinones: high affinity effectors of RNA function. Biorg. Med. Chem. Lett. **18**:3541-3544 PMID 18502126
77. Lu, C., A. M. Smith, R. T. Fuchs, F. Ding, K. Rajashankar, **T. M. Henkin** and A. Ke. 2008. Crystal structures of the S<sub>MK</sub> box riboswitch reveal the SAM-dependent translation inhibition mechanism. Nature Struct. Mol. Biol. **15**:1076-1083. PMID 18806797
78. **Henkin, T. M.** 2008. Riboswitch RNAs: using RNA to sense cellular metabolism. Genes Dev. **22**:3383-3390. (invited review) PMID 19141470
79. Artsimovitch, I. and **T. M. Henkin**. 2009. *In vitro* approaches to analysis of transcription termination. Methods **47**:37-43. (invited contribution) PMID 18948199
80. Gutierrez-Preciado, A., **T. M. Henkin**, F. J. Grundy, C. Yanofsky, and E. Merino. 2009. Biochemical features and functional implications of the RNA-based T box regulatory mechanism. Microbiol. Mol. Biol. Rev. **73**:36-61. PMID 19258532
81. **Henkin, T. M.** 2009. "Post-transcriptional regulation," *In* M. Schaechter (ed.), Encyclopedia of Microbiology, 3<sup>rd</sup> edition, pp. 342-356. Elsevier Press, Oxford, UK. (invited review)
82. **Henkin, T. M.** 2009. RNA-dependent RNA switches in bacteria. Methods Mol. Biol. **540**:207-214 (invited review) PMID: 19381562
83. **Henkin, T. M.** 2009. Analysis of tRNA-directed transcription antitermination in the T box system in vivo. Methods Mol. Biol. **540**:281-290 (invited contribution) PMID: 19381567
84. Green, N. R., F. J. Grundy and **T. M. Henkin**. 2010. The T box mechanism: tRNA as a regulatory molecule. FEBS Lett. **584**:318-324. (invited contribution) PMID: 19932103

85. Smith, A. M., R. T. Fuchs and **T. M. Henkin**. 2010. Riboswitch RNAs: Regulation of gene expression by direct monitoring of a physiological signal. *RNA Biol.* **7**:104-110. (invited review) PMID: 20061810
86. **Henkin, T. M.** 2010. Regulation of gene expression by riboswitch RNAs. *In*: Mander, L., and Liu, H.-W., (ed.), *Comprehensive Natural Products Chemistry-II: Chemistry and Biology*. pp. 743-759, Elsevier Press, Oxford. (invited review).
87. **Henkin, T. M.** 2010. Riboswitch RNAs: sensing metabolic signals with RNA transcripts. *Nova Acta Leopoldina*, in press. (invited review)
88. Johnson, C. M., D. A. Manias, H. A. Haemig, S. Shokeen, K. E. Weaver, **T. M. Henkin** and G. M. Dunny. 2010. Direct evidence for control of the pheromone *prgQ* operon of *Enterococcus faecalis* plasmid pCF10 by a countertranscript-driven attenuation mechanism. *J. Bacteriol.* **192**:1634-1642. PMID: 20097859
89. Wang, J., **T. M. Henkin**, and E. P. Nikonowicz. 2010. NMR structure and dynamics of the Specifier Loop domain from the *Bacillus subtilis* *tyrS* T box leader RNA. *Nucl. Acids Res.* **38**:3388-3398. PMID: 20110252
90. Lu, C., F. Ding, A. Chowdhury, V. Pradhan, J. Tomsic, M. W. Holmes, T. M. Henkin and A. Ke. 2010. SAM recognition and conformational switching mechanism in the *Bacillus subtilis* *yitJ* S Box/SAM-I riboswitch. *J. Mol. Biol.* **404**:803-818. PMID: 20951706
91. Smith, A. M., R. T. Fuchs, F. J. Grundy and **T. M. Henkin**. 2010. The S<sub>MK</sub> box of *Enterococcus faecalis* is a reversible riboswitch. *Mol. Microbiol.* **78**:1393-1402. PMID: 21143313
92. Wilson, R. C., A. M. Smith, R. T. Fuchs, I. R. Kleckner, **T. M. Henkin**, and M. P. Foster. 2011. Tuning riboswitch regulation through conformational selection. *J. Mol. Biol.* **405**:926-938. PMID: 21075119
93. **Henkin, T. M.** and J. Casadesus. 2011. Regulation at multiple levels: themes and variations. *Curr. Opin. Microbiol.* **14**:115-117. PMID: 21382741 (invited review)
94. **Henkin, T. M.** 2011. Attenuation. *In*: S. Maloy and K. Hughes (ed.), "Brenner's Online Encyclopedia of Genetics, 2<sup>nd</sup> Edition," Academic Press. (invited chapter)
95. Lu, C., A. M. Smith, F. Ding, A. Chowdhury, **T. M. Henkin**, and A. Ke. 2011. Variable sequences outside the SAM-binding core critically influence the conformational dynamics of the SAM-III/S<sub>MK</sub> box riboswitch. *J. Mol. Biol.* **409**:786-799. PMID: 21549712
96. Wilson-Mitchell, S. N., F. J. Grundy, and **T. M. Henkin**. 2012. Analysis of lysine recognition and specificity of the *Bacillus subtilis* L box riboswitch. *Nucl. Acids Res.*, in press.
97. Caserta, E., H. Haemig, D. Manias, J. Tomsic, F. J. Grundy, **T. M. Henkin** and G. Dunny. In vivo and in vitro analysis of regulation of the pheromone-responsive *prgQ* promoter by the PrgX pheromone receptor protein. Manuscript submitted to *J. Bacteriol.*

98. Caserta, E., F. J. Grundy and **T. M. Henkin**. Codon-anticodon recognition in the *Bacillus subtilis* *glyQS* T box antitermination system. Manuscript in preparation.

99. Belyaeskaya, A., F. J. Grundy, J. R. Brown, S. M. Rollins and **T. M. Henkin**. Comparative analysis of *ileS* T box family leaders. Manuscript in preparation.

#### **TEXTBOOK:**

Snyder, L. R., J. E. Peters, **T. M. Henkin** and W. C. Champness. 2012. Molecular Genetics of Bacteria, 4<sup>th</sup> Edition. American Society for Microbiology, Washington, DC, in press.

#### **PATENTS:**

10/226,614 Jennifer V. Hines, Stephen C. Bergmeier, **Tina M. Henkin**, Frank J. Grundy, inventors. Compositions that bind antiterminator RNA and assay for screening such compositions; granted 3/06

10/617,979 **Tina M. Henkin**, Frank J. Grundy, Inventors. In vitro transcription assay for T box antitermination system, granted 8/08

#### **JOURNAL REVIEWS:**

Editorial Board: Journal of Bacteriology (past)  
Molecular Microbiology (past)  
Archaea (past)  
Annual Review of Genetics (current)

Reviewer: Journal of Bacteriology  
Molecular Microbiology  
Journal of Biological Chemistry  
Journal of Molecular Biology  
Proceedings of the National Academy of Sciences, USA  
Science  
Microbiology  
Archives of Microbiology  
FEMS Microbiology Letters  
Biochemistry and Cell Biology  
Nucleic Acids Research  
Gene  
Biotechnology Progress  
Molecular Microbiology and Biotechnology  
Trends in Genetics  
Genome Biology  
Nature Genetics  
Nature  
Microbiology and Molecular Biology Reviews  
Current Opinion in Microbiology  
Nature Education

Contributor, Faculty of 1000 On-line Review Service

## **EXTRAMURAL REVIEWS:**

- 1996: **National Institutes of Health Study Section ad hoc member**, Special Study Section 2, Chemistry and Related Sciences Special Emphasis Panel
- 1997-2001: **National Institutes of Health Study Section member**, Microbial Physiology and Genetics MBC-2
- 1998: **External Review Panel Member**, Department of Bacteriology, University of Wisconsin
- 1995-2010: **National Science Foundation**, ad hoc reviewer
- 1999: **Israel Science Foundation**, ad hoc reviewer
- 2000-2004: **Israel/US Binational Science Foundation**, ad hoc reviewer
- 2001: **North Carolina Biotechnology Center**, Academic Research Initiation Grant ad hoc reviewer
- 2002: **Bacillus Genetic Stock Center Advisory Panel** – review for NSF grant renewal
- 2003: **Howard Hughes Medical Institute Predoctoral Fellowships in Biological Sciences panel**, Genetics and Molecular Biology 1
- 2003: **External Review Panel Member**, National Institutes of Health, NCI, Laboratory for Molecular Biology intramural research
- 2004: **National Institutes of Health Special Emphasis panel member**
- 2006-present renewal **Bacillus Genetic Stock Center Advisory Panel** – review for NSF grant renewal
- 2006: **National Institutes of Health Special Emphasis panel member**
- 2007: **External Review Panel Member**, Department of Biological Sciences, Virginia Tech University
- 2008: **National Institutes of Health Special Emphasis panel member**
- 2008: **Scientific Advisory Panel, Howard Hughes Medical Institute**
- 2009: **Austrian Science Fund**, ad hoc reviewer
- 2009-2013 **National Institutes of Health Study Section member**, Prokaryotic Cellular and Molecular Biology (PCMB)
- 2010: **Natural Sciences and Engineering Research Council of Canada**, ad hoc reviewer
- 2010: **Oak Ridge Associated Universities, Pennsylvania Department of Health**, ad hoc reviewer
- 2011: **External Review Panel Member**, National Institutes of Health, NCI, Laboratory for Molecular Biology intramural research

## **INSTITUTIONAL SERVICE:**

### **Louisiana State University Medical Center (1987-1992):**

- Biosafety Committee, 1988-1991
- Chair, 1990-1991
- Recombinant DNA Safety Committee, 1988-1991
- Medical Student Admissions Committee, 1989-1990
- Building Design Advisory Committee, 1989
- Library Committee, 1991-1992
- Research Advisory Committee, 1991-1992
- Scientific Misconduct Review Committee, 1992

**Albany Medical College (1992-1995):**

Graduate Student Awards Committee, 1993  
Recombinant DNA Safety Committee, 1993-1995

**Ohio State University (1995-present):**

Research Committee, College of Biological Sciences, 1995-1998  
Library Committee, 1996-2001  
Investigation Committee, College of Biological Sciences, 1999-2001  
Departmental Reorganization Committee, College of Biological Sciences, 1999-2000  
Graduate School Representative on candidacy exams, 1996-2005 (1-2/year)  
Freshman Honors Research Seminar review committee, 2001  
Dean Search Committee, College of Biological Sciences, 2001-2002  
Promotion and Tenure Committee, College of Biological Sciences, 2001-2003  
Ohio State Biochemistry Program/Molecular and Cellular Biology Program Graduate Student Mentoring Committee, 2004-present  
Honors Day Lecture Presentations, 2003, 2005, 2010  
Distinguished Scholar Award Committee, 2005  
University Promotion and Tenure Advisory Committee, 2005-2007  
Steering Committee, Molecular Biology Training Grant, 2007-2010  
Advisory Committee, Center for RNA Biology, 2008-2011  
Project CEOS Peer Mentoring Circle participant (2008-present)  
Chairs Collaborating with Chairs participant (2009-2011)  
Dean's Executive Committee, Division of Natural and Mathematical Sciences (2009-present)  
Project CEOS Action Learning Team (2010-present)  
Arts & Sciences Dean/Chairs Advisory Council (2011-present)

**DEPARTMENTAL SERVICE:****Lousiana State University Medical Center (1987-1992)**

Graduate Curriculum Committee, Co-Chair, 1988  
Seminar Program Coordinator, 1989-1990  
Bacteriology Journal Club Coordinator, 1989, 1991  
Biochemistry Faculty Search Coordinator, 1992

**Ohio State University (1995-present):**

Graduate Studies Committee, 1997-2003  
Pathogenesis Faculty Search Committee Chair, 1997-1998  
Pathogenesis Faculty Search Committee, 1998-1999  
Administrative responsibility for supervision of NSF research grants to Drs. Kendrick and Strohl, 1999  
Advisor of record for Anton Woo and Charles DeSanti (for Strohl); PhD. 8/00  
Advisor of record for Hao Jiang (for Kendrick); Ph.D. 12/99  
Molecular Microbiology Faculty Search Committee Chair, 2000-2001  
Molecular Microbiology Faculty Search Committee, 2001-2002  
Photosynthetic Microbiology Faculty Search Committee, 2004-2006  
Graduate Studies Committee, 2004-2006  
**Chair, Promotion and Tenure Committee, 2003-2008**  
**Department Chair, 2009-present**  
Director, Howard Hughes Medical Institute IDEAS Undergraduate Research Fellowship Program, 2010-present

## GRADUATE STUDENTS:

Sung Hoon Moon, 1988-1990: The *Bacillus subtilis* *spc* operon  
Yanhong Wang, 1993-1994: Regulation of the *Bacillus subtilis* *tyrS* gene  
Andrew J. Turinsky, 1993-1999, Ph.D. 1999: Transcriptional activation by the *Bacillus subtilis* catabolite control protein CcpA; currently postdoctoral associate at Indiana University School of Medicine  
Sean Rollins, 1995-2002, Ph.D. 2002: tRNA-mRNA interactions in the *Bacillus subtilis* T box antitermination system; currently Postdoctoral Associate at Massachusetts General Hospital  
Wade Winkler, 1996-2002, Ph.D. 2002: *trans*-acting factors affecting *Bacillus subtilis* *tyrS* antitermination; currently Assistant Professor at University of Texas Southwestern Medical Center, Dallas, TX  
Tessa Blais, 1997-2000, M.S. 2000: Transcriptional activation of the *Bacillus subtilis* *ackA* gene; currently Research Associate, Battelle Labs  
Ekta Sirohi, 1997-1999: Regulation of the *Bacillus subtilis* *ykrW* gene  
Brooke (Murphy) McDaniel, 1999-2005, Ph.D. 2005: The *Bacillus subtilis* S box antitermination system, currently Clinical Research Coordinator at Ohio State University  
Andrea Graytock, 2000-2001: The *Bacillus subtilis* S and T box systems; currently Instructor, Otterbein College  
Mary Yousef, 2000-2004, Ph.D. 2004: The *Bacillus subtilis* T box system; currently postdoctoral associate, McMaster University  
Jessica Williams, 2002: The *Bacillus subtilis* T box system  
Laura Martz, 2004: The L box system; currently Research Assistant, Ohio State University  
Nicholas Green, 2004-2010, M.S., 2010: The T box system  
Ryan Fuchs, 2004-2009, Ph.D. 2009: The S<sub>MK</sub> box system; currently research scientist, New England Biolabs  
Sharnise (Wilson) Mitchell, 2004-present: The L box system  
Vineeta (Kurlekar) Pradhan, 2005-present: The S box system  
Angela Smith, 2006-2009, Ph.D. 2009: The S<sub>MK</sub> box system; currently postdoctoral researcher, University of Central Florida  
Liang-Chun Liu, 2008-present: The T box system  
Anna Belyaevskaya, 2009-present: The T box system  
Yiming Wang, 2010-present: Metabolite-binding riboswitches  
Rebecca Williams-Wagner, 2010-present: The T box system  
Kyle Kruezer, 2011-present: The T box system  
Brittany Theobald, 2011-present: The S box riboswitch

## POSTDOCTORAL RESEARCH ASSOCIATES:

Frank Grundy, 1989-present  
Margaret Haldeman, 1996-2000; currently scientific reviewer, Chemical Abstracts Services  
Dennis Frisby, 2003-2004; currently Assistant Professor, Cameron University  
Enrico Caserta, 2005-2008; currently Research Scientist, Ohio State University  
Jerneja Tomsic, 2005-2008; currently Research Scientist, Ohio State University  
Brooke McDaniel, 2005-2007; currently Clinical Research Coordinator, Ohio State University  
Aline Gomez Maqueo-Chew, 2007-2010  
Angela Smith, 2009-2011; currently postdoctoral researcher, University of Central Florida

### **VISITING SCIENTISTS:**

Tsetska Takova, 1990-1991  
Rajindar Sandhu, 1991  
Gary Dunny, 2007

### **UNDERGRADUATE STUDENT RESEARCH:**

Angela Adams (1995-1996)  
Reginald Ballard (1996-1997)  
Andrew Green (1997-1998)  
Jennifer Collins (1997-1998)  
Kelly McQuown (honors) (1999-2000)  
Jared Ford (2001)  
Clara Ruiz (honors) (2003-2005)  
Usama Fayyez (2007)  
Alex Chaitoff (honors) (2010-2011)  
Adam Tabaa (2010-2011)

### **GRADUATE STUDENT CANDIDACY EXAM COMMITTEES:**

**Louisiana State University Medical School:** 15

**Albany Medical College:** 8

**Ohio State University:** 37

### **DISSERTATION EXAM COMMITTEES:**

**Lousiana State University Medical School:** 7 Ph.D., 1 M.S.

**Albany Medical College:** 3 Ph.D., 1 M.S.

**Ohio State University:** 30 Ph.D., 5 M.S.

### **UNDERGRADUATE HONORS COMMITTEES:**

**Ohio State University:** 5

### **OTHER SERVICE ACTIVITIES:**

MentorNet Community member, 2006-present  
Faculty mentor of record for Drs. Ahmer, Ibba, Artsimovitch; informal mentoring of Drs. Bryant, Rondon, Satoskar, Alfonzo, Fredrick, Alber, Rappleye, Seveau, Abedon, Ruiz, Santangelo (Dept. of Microbiology, OSU); Drs. Foster, Wang (OSU); Dr. Hines (OSU/Ohio University); numerous others at other universities

American Society for Microbiology Founders' Award Nominating Committee, 2006-2008  
Nat Sternberg Thesis Award Prize Committee, 2005-2007  
Raymond W. Sarber Award Selection Committee, 2005-2007  
American Society for Microbiology Founders' Award Selection Committee, 2008-2010

#### **INVITED SEMINARS:**

Louisiana State University-Shreveport, Department of Biology, 1998, 1989, 1990, 1991  
Centenary College, Department of Biology, 1990  
Texas College of Osteopathic Medicine, Department of Microbiology and Immunology, 1990  
University of Wisconsin-Madison, Department of Bacteriology, 1991  
Cornell University, Department of Genetics, 1993  
Wadsworth Center, New York State School of Public Health, 1993  
University of Illinois-Chicago, Laboratory for Molecular Biology, 1993  
Tufts University Medical School, Department of Molecular Biology and Microbiology, 1993  
State University of New York at Albany, Department of Biology, 1993  
Ohio State University, Department of Microbiology, 1994  
Public Health Research Institute, New York, 1994  
State University of New York at Buffalo, Department of Biological Sciences, 1994  
University of Connecticut Medical School, Department of Biochemistry, 1994  
Rockefeller University, Department of Biology, 1994 (seminar and class lecture)  
University of Illinois, Department of Microbiology, 1994  
Cubist Pharmaceuticals, Cambridge, MA, 1994  
National Institutes of Health, Bethesda, MD, 1994  
Battelle Institute, Columbus, OH, 1995  
University of Wisconsin-Madison, Department of Bacteriology, 1995  
Loyola University Medical School-Chicago, Department of Microbiology, 1995  
Penn State University, Department of Biochemistry and Molecular Biology, 1996  
Purdue University, Department of Biochemistry, 1996  
Cubist Pharmaceuticals, Cambridge, MA, 1996  
Swarthmore College, Department of Biology, Howard Hughes Seminar Series, 1997  
University of Kentucky Medical School, Department of Microbiology and Immunology, 1997  
Ohio State University, Department of Medical Microbiology and Immunology, 1997  
Harvard University Medical School, Department of Microbiology and Immunology, 1997  
Tufts University Medical School, Department of Molecular Biology and Microbiology, 1997  
Ohio State University RNA Group, 1998  
Genencor International, San Francisco, CA, 1998  
University of Michigan, Departments of Microbiology and Biophysics, 1999  
Ohio State University, Department of Microbiology, 1999  
University of Arizona, Program in Genetics, 2001  
University of Illinois-Chicago, Laboratory for Molecular Biology, 2001  
National Institutes of Health, 2001  
North Carolina State, Department of Microbiology, 2001  
IBIS Therapeutics, Carlsbad, CA, 2001  
University of Illinois, Department of Microbiology, 2002  
Battelle Institute, Columbus, OH, 2002  
University of Georgia, Department of Microbiology, 2002 (seminar and class lecture)  
Ohio State University, MCDB Program, 2003  
Thomas Jefferson University, Department of Biochemistry and Molecular Pharmacology, 2003  
University of Texas Health Sciences Center - Houston, Department of Microbiology and Molecular

Genetics, 2003

Chemical Abstracts Service, Department of Molecular Biology and Genetics, 2003

Ohio State University, Department of Microbiology, 2004

Ohio State University, Department of Chemistry, Biological Chemistry Division, 2004

Mount Sinai School of Medicine, Department of Pharmacology and Biological Chemistry, 2004

Harvard University Medical School, Department of Microbiology and Immunology, 2004

Tufts University Medical School, Department of Molecular Biology and Microbiology, 2004

University of Tennessee Medical School, Department of Microbiology, 2004

Charles F. Adair Distinguished Alumnus Lecture in Bacteriology, Department of Bacteriology,  
University of Wisconsin, 2004

Emory University School of Medicine, Department of Microbiology and Immunology, 2004  
(seminar and class lecture)

Reed College, Department of Biology, 2005

University of Nebraska-Lincoln, Center for Biological Chemistry and Redox Biology Center, 2005

Penn State University, Department of Biochemistry and Molecular Biology, Stone Lecture, 2005

Stanford University, Department of Biology, 2005

University of Iowa Medical School, Department of Microbiology, 2006

University of Medicine and Dentistry of New Jersey, Department of Microbiology and Molecular  
Genetics, 2006

Universidad Nacional Autonoma de Mexico, Biotechnology Institute, Mexico City, MX, 2006  
(seminar  
and class lecture)

Rice University, Department of Biology, 2006

Ohio State University, MCDB and OSBP programs, 2006

Virginia Tech University, Department of Biological Sciences, 2006

Cornell University, Department of Biological Sciences, 2007

University of Alabama-Birmingham Medical School, Department of Microbiology, 2007

Tufts University Medical School, Department of Molecular Biology and Microbiology, 2007

University of Minnesota Medical School, Department of Microbiology, 2008

University of Illinois, Department of Biochemistry, 2008

Distinguished Microbiology Lecturer, Miami University of Ohio, Department of Microbiology, 2008

State University of New York at Buffalo, Department of Biological Sciences, 2009

Max von Pettenkofer-Institut, Munich, Germany, 2009

University of Connecticut Medical School, Department of Microbiology, 2009

Ohio State University, Mathematical Biosciences Institute, 2009

University of Florida, Department of Biology, 2010

McMaster University, Department of Biology, 2010

Brown University, Department of Chemistry, 2010

Swarthmore College, Department of Biology, 2010

Helen Whitely Memorial Lecturer, University of Washington, Department of Microbiology, 2011

University of Chicago, Department of Biochemistry, scheduled Autumn, 2012

#### **INVITED PRESENTATIONS AT SCIENTIFIC MEETINGS:**

American Society for Microbiology Annual Meeting, Las Vegas, NV, 1994 (invited speaker)

American Society for Microbiology Annual Meeting, New Orleans, LA, 1996 (talk, session  
co-convenor)

Gordon Conference on Stress Response, 1996 (invited speaker)

Molecular Genetics of Bacteria and Phages Meeting, Cold Spring Harbor, NY. 1996 (invited  
speaker,

session chair)

Molecular Genetics of Bacteria and Phages Meeting, Madison, WI, 1997 (invited speaker, session chair)

Society for General Microbiology, 139th Meeting, Bradford, England, 1998 (invited speaker)

Keystone Symposium on Bacterial Chromosomes, Santa Fe, NM, 1998 (invited speaker)

American Society for Microbiology Annual Meeting, Chicago IL, 1999 (talk, session convener)

10th International Conference on Bacilli, Baveno, Italy, 1999 (invited overview talk)

Post-initiation Activities of RNA Polymerase, Mountain Lake, VA, 2000 (session chair and speaker)

Midwest Prokaryotic Meeting, Bloomington, IN, 2001 (invited speaker)

Society for General Microbiology 150<sup>th</sup> Ordinary Meeting, Main Symposium, Warwick, England, 2002 (invited speaker)

American Society for Microbiology 103<sup>rd</sup> General Meeting, Washington, D.C., 2003 (invited speaker)

FASEB meeting on Prokaryotic Transcription Initiation, Saxtons River, VT, 2003 (invited speaker)

Gordon Conference on Microbial Stress Response, 2004 (invited speaker)

Post-initiation Activities of RNA Polymerase, Mountain Lake, VA, 2004 (session chair and speaker)

American Society for Microbiology 105<sup>th</sup> General Meeting, Washington, D.C., 2005 (session convener)

3<sup>rd</sup> Conference on Functional Genomics of Gram-Positive Microorganisms, San Diego, CA, 2005 (invited speaker, session chair)

IUMS XLth International Congress on Bacteriology and Applied Microbiology, 2005 (session convener and speaker)

American Society for Microbiology 106<sup>th</sup> General Meeting, Orlando, FL, 2006 (session convener and speaker)

Gordon Conference on Nucleic Acids, 6/06 (session chair, invited speaker)

Cold Spring Harbor Symposium on Quantitative Biology, Cold Spring Harbor, NY, 6/06 (invited speaker)

American Society for Microbiology, Ohio Branch, Kent State University, Kent, OH, 2007 (keynote speaker)

2<sup>nd</sup> ASM Conference on Integrating Metabolism and Genomic, Montreal, CAN, 2007 (invited speaker)

American Society for Microbiology 107<sup>th</sup> General Meeting, Toronto, CAN, 2007 (session convener and invited speaker – Division H Lecturer)

American Society for Gene Therapy Annual Meeting, Seattle, WA, 2007 (invited speaker, educational session)

Wind River Conference on Prokaryotic Biology, Estes Valley, CO, 2007 (keynote speaker)

American Society for Microbiology, North Carolina Branch, Greensboro, NC, 2007 (ASM Branch Lecturer/cancelled – illness)

22<sup>nd</sup> tRNA Workshop, Uppsala, Sweden, 2007 (invited speaker, session chair/cancelled - illness)

American Society for Microbiology, Arizona-Southern Nevada Branch, 2008 (ASM Branch Lecturer)

International Symposium on Metabolism Meets Virulence, Munich, Germany, 2009 (invited speaker)

American Society for Microbiology 109<sup>th</sup> General Meeting, Philadelphia, PA, 2009 (invited speaker)

FASEB meeting on Prokaryotic Transcription Initiation, Saxtons River, VT, 2009 (invited speaker)

Symposium on RNA Biology, Research Triangle Park, NC, 2009 (invited speaker)

BacNet meeting, Barcelona, Spain, 2010 (invited speaker)

RNA in Motion, Iowa City, IA, 2010 (plenary speaker)

ASBMB Annual Meeting, Washington, DC, 2011 (Theme Leader, session chair, invited speaker)

FASEB meeting on Prokaryotic Transcription Initiation, Saxtons River, VT, 2011 (invited speaker, session chair)

Molecular Genetics of Bacteria and Phages Meeting, Madison, WI, 2011, invited speaker, session

chair)  
2011 International Symposium on Aminoacyl-tRNA Synthetases, Snowbird, UT, 2011, invited speaker  
FASEB meeting on Posttranscriptional Regulation of Gene Expression (scheduled June 2012, invited speaker, session chair)

#### **ADDITIONAL PRESENTATIONS AT SCIENTIFIC MEETINGS:**

American Society for Microbiology Regional Meeting, Baton Rouge, LA, 1988 (poster, session chair)  
American Society for Microbiology Annual Meeting, New Orleans, LA, 1989 (poster)  
International Meeting on Bacillus Genetics and Biotechnology, Asilomar, CA, 1989 (poster)  
International Conference on the Bacillus Genome, Paris, France, 1990 (two posters)  
Keystone Symposium on Translational Control, Tamarron, CO, 1991 (poster)  
American Society for Microbiology Annual Meeting, Dallas, TX, 1991 (two posters)  
Genencor Conference on Bacillus Genetics and Biotechnology, Palo Alto, CA, 1991 (poster and talk)  
International Spores Meeting, Woods Hole, MA, 1992 (talk and two posters)  
New England Regional Spores Meeting, Cambridge, MA, 1992 (talk)  
International Conference on Bacilli, Paris, France, 1993 (two posters)  
Molecular Genetics of Bacteria and Phages Meeting, Cold Spring Harbor, NY, 1993 (talk)  
New England Regional Spores Meeting, Cambridge, MA, 1993 (talk)  
Molecular Genetics of Bacteria and Phages Meeting, Madison, WI, 1994 (talk)  
16th International tRNA Workshop, Madison, WI, 1995 (talk)  
Rustbelt RNA Meeting, 1998 (poster - Hines)  
Experimental Nuclear Magnetic Resonance Conference, Orlando, FL, 1999 (poster - Hines)  
ACS 31st Central Regional Meeting, Columbus, OH, 1999 (talk - Hines)  
Rustbelt RNA Meeting, 1999 (3 posters [1 Hines])  
ACS 219th National Meeting, San Francisco, CA, 2000 (poster - Hines)  
RNA Society, Madison, WI 2000 (poster - Hines)  
Rustbelt RNA Meeting, 2000 (talk, poster - Hines)  
Nucleic Acids Gordon Conference, Salve Regina University, Providence, RI, 2001 (poster - Hines)  
Symposium on RNA Biology, Chapel Hill, NC, 2001 (talk, 3 posters [1 Hines])  
Rustbelt RNA Meeting, 2001 (talk)  
12<sup>th</sup> International Conference on Bacilli, Baveno, Italy 2003, (talk - McDaniel)  
Molecular Genetics of Bacteria and Phages, Madison, WI, 2003 (talk)  
Gordon Conference on Nucleic Acids, RI, 2004 (poster - Yousef)  
Molecular Genetics of Bacteria and Phages, Cold Spring Harbor, NY, 2004 (talk)  
American Society for Microbiology Annual Meeting, Atlanta, GA, 2005 (poster)  
Molecular Genetics of Bacteria and Phages, Cold Spring Harbor, NY, 2006 (talk - Tomsic; poster - Caserta)  
Rustbelt RNA Meeting, 2006 (talks - Fuchs & Tomsic; poster - Caserta)  
Post-Initiation Activities of RNA Polymerase, Mountain Lake, VA, 2006 (talk)  
Gordon Conference on Nucleic Acids, RI, 2007 (poster - Miranda-Rios)  
Molecular Genetics of Bacteria and Phages, Madison, WI, 2007 (talk - Fuchs; poster - Smith)  
Rustbelt RNA Meeting, 2007 (posters - Smith & Green)  
American Society for Microbiology Ohio-Indiana Branch Meeting, Muncie, IN, 2008 (talk - Green)  
American Crystallography Association Annual Meeting, Knoxville, TN, 2008 (talk - Ke)  
Rustbelt RNA Meeting, 2008 (poster - Wilson/Foster)  
American Society for Microbiology Ohio Branch Meeting, Granville, OH, 2009 (talk - Fuchs)  
American Society for Microbiology Annual Meeting, Philadelphia, PA, 2009 (poster - Gutierrez-Preciado)

Rustbelt RNA Meeting, 2009 (poster – Liu)  
Rustbelt RNA Meeting, 2011 (poster – Liu)