

Curriculum Vitae Brenda L. Bass

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Professional Experience

Distinguished Professor	3/07-present	Department of Biochemistry, University of Utah
Professor	7/99-2/07	School of Medicine, Salt Lake City, Utah
Associate Professor	7/95-6/99	
Assistant Professor	6/89-6/95	
Adjunct Professor	7/03-present	Department of Human Genetics, University of Utah
Adjunct Associate Professor	7/96-6/03	School of Medicine, Salt Lake City, Utah
Investigator	5/94-8/09	Howard Hughes Medical Institute
Editorial Experience	1995-present	<i>RNA</i> , editorial board member
	2004-2007	<i>Science</i> , editorial board member
	1998-2002	<i>Nucleic Acids Research</i> , editorial board member
	1998-2000	RNA Editing, <i>Frontiers in Molecular Biology</i> series, IRL Press at Oxford University Press, volume editor
	1994-1999	<i>Current Biology</i> , editorial board member

Education

Postdoctoral Fellow	8/85-5/89	Department of Genetics Fred Hutchinson Cancer Center Seattle, Washington
Ph.D. in Chemistry	8/85	Graduate student, 9/80-7/85 Department of Chemistry University of Colorado Boulder, Colorado
B.A. in Chemistry	5/77	Colorado College Colorado Springs, Colorado

Honors

2007-present	American Academy of Arts & Sciences (elected member)
2007-present	Distinguished Professor of Biochemistry, University of Utah School of Medicine
1994-2009	Howard Hughes Medical Institute, Investigator
1991-1996	David and Lucile Packard Fellowship
1990-1994	Pew Scholars Award
1985-1988	Damon Runyon-Walter Winchell Postdoctoral Fellowship
1983-1984	University of Colorado Doctoral Fellowship
1983-1984	ARCS Recipient (Achievement Rewards for College Scientists)

Professional Community Activities

1998-present	Nuclear Control of Cell Growth & Differentiation Program, Huntsman Cancer Institute, member
2007-2010	AAAS, Council Delegate, Section on Biological Sciences (elected office)
2007	RNA Society, President (elected office)
2004-2005	NIH Molecular Genetics C Study Section, Member
2004-2006	RNA Society, Board of Directors (elected office)
2003	Gordon Research Conference on RNA Editing, Co-Chair
2001-2004	NIH Cell Development and Function 2 Study Section, Member
2001	Gordon Research Conference on RNA Editing, Co-vice Chair
2000	Damon Runyon Walter Winchell Postdoctoral Fellowships, ad hoc reviewer
1998-1999	RNA Society, Council Member (elected office)
1996	Gordon Research Conference on Nucleic Acids, Co-organizer
1995-1996	RNA Society, Nominations Committee, Chair
1995	Cold Spring Harbor RNA Processing Meeting, Co-organizer
1991	NIH Molecular Biology Study Section, ad hoc member

Invited Seminars (since 2003)

Meetings and Courses

2009	Keystone Symposium on The Biology of RNA Silencing (session chair)
2009	Gordon Research Conference on RNA Editing
2008	Department of Biochemistry Retreat, University of Texas Southwestern Medical Center (keynote speaker)
2008	Gordon Research Conference on Biology of Post-Transcriptional Gene Regulation
2008	FASEB Meeting on Nucleic Acids Enzymes
2007	Institute of Molecular Biology Retreat (Taipei, Taiwan)
2007	Federation of European Biochemical Societies, Workshop on DNA and RNA Modification Enzymes (Aussois, France)
2007	Gordon Research Conference on RNA Editing
2006	Department of Biochemistry and Molecular Biophysics Research Retreat, University of Arizona (keynote speaker)
2006	FASEB Meeting on Nucleic Acids Enzymes (session chair)
2006	Cold Spring Harbor Symposium on Regulatory RNAs, Cold Spring Harbor, New York
2006	Multiple Functions of RNA in Gene Regulation, Conférences Jacques-Monod, Roscoff, France
1998-2005	RNA Structure and Function, Int'l Centre for Genetic Engineering and Biotechnology (Trieste, Italy) (course instructor)
2005	Biological Sciences Dean's Symposium, University of California (San Diego, CA)
2005	Gordon Research Conference on RNA Editing
2004	Society for Neuroscience 34 th Annual Meeting (Presidential Special Lecturer)
2004	FASEB Meeting on Post-Transcriptional Control of Gene Expression (session chair)
2004	RNA Society (Madison, Wisconsin) (session chair)
2004	Keystone Symposium on siRNAs and miRNAs (session chair)
2003	Ribo-Club, University of Sherbrooke, Québec, Canada (Student Choice – Speaker of the Year)
2003	Structure, function and dynamics of RNA-protein complexes, Göttingen, Germany

- 2003 8th Annual International RNA Congress (Vienna, Austria)
 2003 Gordon Research Conference on Nucleic Acids
 2003 Gordon Research Conference on Molecular Cell Biology
 2003 West Coast Biological Sciences Undergraduate Research Conference, Colorado College
 (Colorado Springs, CO) (keynote speaker)
 2003 Horizon Symposia, Understanding the RNAissance, Aventis and The Nature Publishing Group
 2003 Gordon Research Conference on RNA Editing (co-Chair)

Universities and Institutes

- 2009 Carnegie Mellon University, Pittsburgh
 2009 University of Wisconsin, Madison
 2008 University of Massachusetts Medical School, Worcester
 2008 University of Georgia, Athens
 2007 University of California, San Francisco
 2007 University of Oregon, Eugene
 2007 Duke University
 2006 Yale University
 2006 Johns Hopkins University School of Medicine
 2006 Harvard Medical School, Children's Hospital, Boston
 2005 University of Washington, Seattle
 2005 Marquette University, Milwaukee, Wisconsin
 2005 MD Anderson Cancer Center, Houston, Texas
 2004 Sirna Therapeutics, Boulder, Colorado
 2004 Fred Hutchinson Cancer Center, Seattle, Washington
 2004 Mayo Clinic College of Medicine
 2004 Massachusetts Institute of Technology
 2003 Louis Pasteur University, Strasbourg, France
 2003 Isis Pharmaceuticals, San Diego
 2003 University of Wisconsin, Madison

Publications

- Parnell, K.M. and Bass, B.L. (2009). Functional redundancy of yeast proteins Reh1 and Rei1 in cytoplasmic 60S subunit maturation. **Mol Cell Biol**, 29: 4014-4023.
- Habig, J.W., Aruscavage, P.J. and Bass, B.L. (2008). In *C. elegans*, high levels of dsRNA allow RNAi in the absence of RDE-4. **PLoS ONE**, 3:e4052. Epub 2008 Dec 29.
- Parker, G.S., Maity, T.S. and Bass, B.L. (2008). dsRNA binding properties of RDE-4 and TRBP reflect their distinct roles in RNAi. **J Mol Biol**, 384: 967-979.
- Hellwig, S. and Bass, B.L. (2008). A starvation-induced noncoding RNA modulates expression of Dicer-regulated genes. **PNAS**, 105: 12897-12902.
- Hundley, H.A., Krauchuk, A.A. and Bass, B.L. (2008). *C. elegans* and *H. sapiens* mRNAs with edited 3' UTRs are present on polysomes. **RNA**, 14: 2050-2060.
- Macbeth, M.R. and Bass, B.L. (2007). Large-scale overexpression and purification of ADARs from *Saccharomyces cerevisiae* for biophysical and biochemical studies. In *Methods in Enzymology*, (ed. J.M. Gott) Elsevier Inc., 424: 319-331.
- Welker, N.C., Habig, J.W. and Bass, B.L. (2007). Genes misregulated in *C. elegans* deficient in Dicer, RDE-4, or RDE-1, are enriched for innate immunity genes. **RNA**, 13: 1090-1102.
- Habig, J.W., Dale, T. and Bass, B.L. (2007). miRNA editing--we should have inosine this coming. **Mol. Cell**, 25: 792-793.
- Bass, B.L. (2006). How does RNA editing affect dsRNA-mediated gene silencing? **Cold Spring Harbor Symposia on Quantitative Biology**, 71: 285-292.

- Parker, G.S., Eckert, D.M. and Bass, B.L. (2006). RDE-4 preferentially binds long dsRNA and its dimerization is necessary for cleavage of dsRNA to siRNA. **RNA**, 12: 807-818.
- Bass, B.L., Hellwig, S. and Hundley, H.A. (2005). A nuclear RNA is cut out for translation. **Cell**, 123: 181-193.
- Macbeth, M.R., Schubert, H.L., VanDemark, A.P., Lingam, A.T., Hill, C.P. and Bass, B.L. (2005). Inositol hexakisphosphate is bound in the ADAR2 core and required for RNA editing. **Science**, 309: 1534-1539.
- Haudenschild, B.L., Maydanovych, O., Véliz, E.A., Macbeth, M.R., Bass, B.L. and Beal, P.A. (2004). A transition state analog for an RNA-editing reaction. **J. Am. Chem. Soc.**, 126: 11213-11219.
- Macbeth, M.R., Lingam, A.T. and Bass, B.L. (2004). Evidence for auto-inhibition by the N-terminus of hADAR2 and activation by dsRNA binding. **RNA**, 10: 1563-1571.
- Tonkin, L.A. and Bass, B.L. (2003). Mutations in RNAi rescue aberrant chemotaxis of ADAR mutants. **Science**, 302: 1725.
- Tonkin, L.A., Saccomanno, L., Morse, D.P., Brodigan, T., Krause, M. and Bass, B.L. (2002). RNA editing by ADARs is important for normal behavior in *Caenorhabditis elegans*. **EMBO J.**, 21: 6025-6035.
- Knight, S.W. and Bass, B.L. (2002). The role of RNA editing by ADARs in RNAi. **Molecular Cell**, 10: 809-817.
- Morse, D.P., Aruscavage, P.J. and Bass, B.L. (2002). RNA hairpins in noncoding regions of human brain and *Caenorhabditis elegans* mRNA are edited by adenosine deaminases that act on RNA. **PNAS**, 99: 7906-7911.
- Bass, B.L. (2002). RNA editing by adenosine deaminases that act on RNA. **Annu. Rev. Biochem.**, 71: 817-846.
- Knight, S.W. and Bass, B.L. (2001). A role for the RNase III enzyme DCR-1 in RNA interference and germ line development in *C. elegans*. **Science**, 293: 2269-2271.
- Bass, B.L. (2001). The short answer [news and views]. **Nature**, 411: 428-429.
- Bass, B.L., Editor (2001). *RNA Editing: Frontiers in Molecular Biology*, Oxford University Press.
- Hough, R.F. and Bass, B.L. (2001). Adenosine deaminases that act on RNA. In *RNA Editing: Frontiers in Molecular Biology*, (ed. B.L. Bass) Oxford University Press, pp. 77-108.
- Lehmann, K.A. and Bass, B.L. (2000). Double-stranded RNA adenosine deaminases ADAR1 and ADAR2 have overlapping specificities. **Biochemistry**, 39: 12875-12884.
- Domeier, M.E., Morse, D.P., Knight, S.W., Portereiko, M., Bass, B.L. and Mango, S.E. (2000). A link between RNA interference and nonsense-mediated decay in *Caenorhabditis elegans*. **Science**, 289: 1928-1930.
- Öhman, M., Källman, A.M. and Bass, B.L. (2000). In vitro analysis of the binding of ADAR2 to the pre-mRNA encoding the GluR-B R/G site. **RNA**, 6: 687-697.
- Aruscavage, P.J. and Bass, B.L. (2000). A phylogenetic analysis reveals an unusual sequence conservation within introns involved in RNA editing. **RNA**, 6: 257-269.
- Bass, B.L. (2000). Double-stranded RNA as a template for gene silencing [minireview]. **Cell**, 101: 235-238.
- Hough, R.F., Lingam, A.T. and Bass, B.L. (1999). *Caenorhabditis elegans* mRNAs that encode a protein similar to ADARs derive from an operon containing six genes. **Nucleic Acids Res.**, 27: 3424-3432.
- Lehmann, K.A. and Bass, B.L. (1999). The importance of internal loops within RNA substrates of ADAR1. **J. Mol. Biol.**, 291: 1-14.
- Morse, D.P. and Bass, B.L. (1999). Long RNA hairpins that contain inosine are present in *Caenorhabditis elegans* poly (A)+ RNA. **PNAS**, 96: 6048-6053.

- Finerty, P.J., Jr. and Bass, B.L. (1999). Subsets of the zinc finger motifs in dsRBP-ZFa can bind double-stranded RNA. **Biochemistry**, 38: 4001-4007.
- Saccomanno, L. and Bass, B.L. (1999). A minor fraction of basic fibroblast growth factor mRNA is deaminated in *Xenopus* stage VI and matured oocytes. **RNA**, 5: 39-48.
- Polson, A.G., Ley, H.L. III., Bass, B.L. and Casey, J.L. (1998). Hepatitis delta virus RNA editing is highly specific for the amber/W site and is suppressed by hepatitis delta antigen. **Mol. Cell. Biol.**, 18: 1919-1926.
- Paul, M.S. and Bass, B.L. (1998). Inosine exists in mRNA at tissue-specific levels and is most abundant in brain mRNA. **EMBO J.**, 17: 1120-1127.
- Bass, B.L. and Öhman, M. (1998). RNA Editing. In *Comprehensive Natural Products Chemistry, Vol. 6: Prebiotic Chemistry, Molecular Fossils, Nucleosides and RNA*, (eds. D. Söll, S. Nishimura and P. Moore) Elsevier Science Ltd., pp. 97-108.
- Morse, D.P. and Bass, B.L. (1997). Detection of inosine in messenger RNA by inosine-specific cleavage. **Biochemistry**, 36: 8429-8434.
- Finerty, P.J., Jr. and Bass, B.L. (1997). A *Xenopus* zinc finger protein that specifically binds dsRNA and RNA-DNA hybrids. **J. Mol. Biol.**, 271: 195-208.
- Hough, R.F. and Bass, B.L. (1997). Analysis of *Xenopus* dsRNA adenosine deaminase cDNAs reveals similarities to DNA methyltransferases. **RNA**, 3: 356-370.
- Bass, B.L., Nishikura, K., Keller, W., Seeburg, P.H., Emeson, R.B., O'Connell, M.A., Samuel, C.E. and Herbert, A. (1997). A standardized nomenclature for adenosine deaminases that act on RNA [letter to the editor]. **RNA**, 3: 947-949.
- Bass, B.L. (1997). RNA editing and hypermutation by adenosine deamination. **Trends Biochem. Sci.**, 22: 157-162.
- Polson, A.G., Bass, B.L. and Casey, J.L. (1996). RNA editing of hepatitis delta virus antigenome by dsRNA adenosine deaminase. **Nature**, 380: 454-456.
- Hurst, S.R., Hough, R.F., Aruscavage, P.J. and Bass, B.L. (1995). Deamination of mammalian glutamate receptor RNA by *Xenopus* dsRNA adenosine deaminase: similarities to in vivo RNA editing. **RNA**, 1: 1051-1060.
- Bass, B.L. (1995). An I for editing. **Current Biology**, 5: 598-600.
- Bass, B. L. (1995). Double-stranded RNA binding proteins and their substrates. **Nucleic Acids Symposium Series**, 33: 13-15.
- Polson, A.G. and Bass, B.L. (1994). Preferential selection of adenosines for modification by double-stranded RNA adenosine deaminase. **EMBO J.**, 13: 5701-5711.
- Saccomanno, L. and Bass, B.L. (1994). The cytoplasm of *Xenopus* oocytes contains a factor that protects double-stranded RNA from adenosine-to-inosine modification. **Mol. Cell. Biol.**, 14: 5425-5432.
- Hough, R.F. and Bass, B.L. (1994). Purification of the *Xenopus laevis* double-stranded RNA adenosine deaminase. **J. Biol. Chem.**, 269: 9933-9939.
- Bass, B.L., Hurst, S.R. and Singer, J.D. (1994). Binding properties of newly identified *Xenopus* proteins containing dsRNA-binding motifs. **Current Biology**, 4: 301-314.
- Bass, B.L. (1993). RNA editing: New uses for old players in the RNA world. In *The RNA World*, (eds. R. Gesteland and J. Atkins) Cold Spring Harbor Laboratory Press, 383-418.
- Bass, B.L. (1992). The dsRNA unwinding/modifying activity: fact and fiction. **Seminars in Developmental Biology**, 3: 425-433.

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- Polson, A.G., Crain, P.F., Pomerantz, S.C., McCloskey, J.A. and Bass, B.L. (1991). The mechanism of adenosine to inosine conversion by the double-stranded RNA unwinding/modifying activity: a high-performance liquid chromatography-mass spectrometry analysis. **Biochemistry**, 30: 11507-11514.
- Sharmeen, L., Bass, B., Sonenberg, N., Weintraub, H. and Groudine, M. (1991). Tat-dependent adenosine-to-inosine modification of wild-type transactivation response RNA. **PNAS**, 88: 8096-8100.
- Bass, B.L. (1991). RNA editing: Splicing: the new edition [news and views]. **Nature**, 352: 283-284.
- Bass, B.L. (1991). RNA editing: *Physarum*—C the difference [news and views]. **Nature**, 349: 370-371.
- Bass, B.L., Weintraub, H., Cattaneo, R. and Billeter, M.A. (1989). Biased hypermutation of viral RNA genomes could be due to unwinding/modification activity of double-stranded RNA [letter]. **Cell**, 56: 331.
- Bass, B.L. and Weintraub, H. (1988). An unwinding activity that covalently modifies its double-stranded RNA substrate. **Cell**, 55: 1089-1098.
- Bass, B.L. and Weintraub, H. (1987). A developmentally regulated activity that unwinds RNA duplexes. **Cell**, 48: 607-613.
- Bass, B.L. and Cech, T.R. (1986). Ribozyme inhibitors: deoxyguanosine and dideoxyguanosine are competitive inhibitors of self-splicing of the Tetrahymena ribosomal ribonucleic acid precursor. **Biochemistry**, 25: 4473-4477.
- Cech, T.R. and Bass, B.L. (1986). Biological catalysis by RNA. **Ann. Rev. Biochem.**, 55: 599-629.
- Bass, B.L. and Cech, T.R. (1984). Specific interaction between the self-splicing RNA of Tetrahymena and its guanosine substrate: implications for biological catalysis by RNA. **Nature**, 308: 820-826.