

1. Kimberly L. Mowry

Professor
Department of Molecular Biology, Cell Biology & Biochemistry

2. Address

Box G-L268, Brown University
Providence, RI 02912

3. Education

1980 B.A. Biochemistry
University of California at Berkeley, Berkeley, CA

1988 Ph.D. Molecular Biophysics & Biochemistry
Yale University, New Haven, CT
Dissertation Advisor: Dr. Joan A. Steitz
Dissertation Title: *Studies on 3' Processing of Histone Premessenger RNAs and the Mammalian U7 snRNP*

4. Professional Appointments

1988-1992 Postdoctoral Fellow, Laboratory of Dr. Douglas A. Melton
Department of Biochemistry and Molecular Biology
Harvard University, Cambridge, MA

1992-1999 Assistant Professor of Biology
Department of Molecular Biology, Cell Biology & Biochemistry
Brown University, Providence, RI

1999-2005 Associate Professor of Biology (tenured)
Department of Molecular Biology, Cell Biology & Biochemistry
Brown University, Providence, RI

2005-present Professor of Biology
Department of Molecular Biology, Cell Biology & Biochemistry
Brown University, Providence, RI

2009-present Chair, Department of Molecular Biology, Cell Biology & Biochemistry
Brown University, Providence, RI

2009-present Robin Chemers Neustein Professor of Biomedicine
Brown University, Providence, RI

5. Completed Publications

Refereed Journal Articles

Wang, E.A., **Mowry, K.L.**, Clegg, D.O., and Koshland, D.E. (1982). Tandem duplication and multiple functions of a receptor gene in bacterial chemotaxis. *J. Biol. Chem.* 257; 4673.

Mowry, K.L. and Steitz, J.A. (1987). Both conserved signals on mammalian histone premessenger RNAs associate with small nuclear ribonucleoproteins during 3' end formation in vitro. *Mol. Cell. Biol.* 7; 1663.

- Mowry, K.L.** and Steitz, J.A. (1987). Identification of the human U7 snRNP as one of several factors involved in the 3' end maturation of histone premessenger RNAs. *Science* 238; 1682.
- Steitz, J.A., Parker, K.A., **Mowry, K.L.**, Montzka, K.A., and Lee, S.I. (1987) Functions of U-snRNPs. *Mol. Biol. Rep.* 12; 202.
- Mowry, K.L.**, Oh, R., and Steitz, J.A. (1989). Each of the conserved sequence elements flanking the cleavage site of mammalian histone pre-mRNAs has a distinct role in the 3'-end processing reaction. *Mol. Cell. Biol.* 9; 3105.
- Mowry, K.L.**, and Melton, D.A. (1992). Vegetal localization directed by a 340-nt RNA sequence element in *Xenopus* oocytes. *Science* 255; 991.
- Mowry, K.L.** (1996). Complex formation between stage-specific oocyte factors and a *Xenopus* mRNA localization element. *Proc. Natl. Acad. Sci. USA* 93; 14608.
- Valles, J.M., Lin, K., Denegre, J.M., and **Mowry, K.L.** (1997). Stable magnetic field gradient levitation of *Xenopus laevis*: Towards low gravity simulation. *Biophys. J.* 73; 1130.
- Gautreau, D., Cote, C.A. and **Mowry, K.L.** (1997). Two copies of a sub-element from the Vg1 RNA localization sequence are sufficient to direct vegetal localization in *Xenopus* oocytes. *Development* 124; 5013.
- Denegre, J.M., Ludwig, E.R., and **Mowry, K.L.** (1997). Localized maternal proteins in *Xenopus* revealed by subtractive immunization. *Dev. Biol.* 192; 446.
- Denegre, J.M., Lin, K., Valles, J.M., and **Mowry, K.L.** (1998). Cleavage planes in frog eggs altered by strong magnetic fields. *Proc. Natl. Acad. Sci. USA* 95; 14729.
- Cote, C.A., Gautreau, D., Denegre, J.M., Kress, T.L., Terry, N.A., and **Mowry, K.L.** (1999) A *Xenopus* protein related to hnRNP I has a role in cytoplasmic RNA localization. *Mol. Cell* 4; 431.
- Valles, J.M., Wasserman, S., Denegre, J.M. and **Mowry, K.L.** (2000) Microscope system for use in high magnetic fields. *Rev. Sci. Instrum.* 71; 3108.
- Valles, J.M., Wasserman, S.R.R.M., Schweidenback, C., Denegre, J.M., and **Mowry, K.L.** (2002) Processes that occur before second cleavage determine third cleavage orientation. *Exp. Cell Res.* 274; 112.
- Bubuneko*, M., Kress*, T.L., Vempati, U.D., **Mowry, K.L.**, and King, M.L. (2002) A consensus RNA signal that directs germ layer determinants to the vegetal cortex of *Xenopus* oocytes. *Dev. Biol.* 248; 82. *co-first authors, T.L. Kress was my student
- Volodina, N. Denegre, J.M. and **Mowry, K.L.** (2003) Apparent mitochondrial assymetry in *Xenopus* eggs. *Dev. Dyn.* 226; 654.
- Xie, J., Lee, J-A., Kress, T.L., **Mowry, K.L.** and Black, D.L. (2003) Protein kinase A phosphorylation modulates transport of the polypyrimidine tract-binding protein. *Proc. Natl. Acad. Sci. USA* 100; 8776.
- Lewis, R.A., Kress, T.L., Cote, C.A., Rokop, M., Gautreau, D. and **Mowry, K.L.** (2004) Conserved and clustered RNA recognition sequences are critical features of signals directing RNA localization in *Xenopus* oocytes. *Mech. Dev.* 121; 101.
- Kress, T.L., Yoon, Y.J. and **Mowry, K.L.** (2004) Nuclear RNP complex assembly initiates cytoplasmic RNA localization. *J. Cell Biol.* 165; 203.

- Yoon, Y.J. and **Mowry, K.L.** (2004) *Xenopus* Staufen is a component of an RNP complex containing Vg1 RNA and kinesin. *Development* 131; 3035.
- Chang, P., Torres, J., Lewis, R.A., **Mowry, K.L.**, Houlston, E. and King, M.L. (2004) Localization of RNAs to the mitochondrial cloud in *Xenopus* oocytes by entrapment and association with endoplasmic reticulum. *Mol. Biol. Cell* 15; 4669.
- King, M.L., Messitt, T.J. and **Mowry, K.L.** (2005). Putting RNAs in the right place at the right time: RNA localization in the frog oocyte. *Biol. Cell.* 97; 19.
- Lewis, R.A. and **Mowry, K.L.** (2007) RNP remodeling during RNA localization. *Differentiation* 75; 507.
- Lewis, R.A., Gagnon, J.G. and **Mowry, K.L.** (2008) PTB/hnRNP I is required for RNP remodeling during RNA localization in *Xenopus* oocytes. *Mol. Cell Biol.* 28; 678.
- Messitt, T.J., Gagnon, J.A., Kreiling, J.A., Pratt, C.A., Yoon, Y.J. and **Mowry, K.L.** (2008) Multiple kinesin motors coordinate cytoplasmic RNA transport on a sub-population of microtubules in *Xenopus* oocytes. *Dev. Cell* 15; 426.
- Gagnon J.A., **Mowry K.L.** (2010) Visualizing RNA localization in *Xenopus* oocytes. *J. Vis. Exp.* 35; 1704.
- Pratt, C.A. and **Mowry, K.L.** (2010) Preparation of a highly active cell-free translation system from immature *Xenopus laevis* oocytes. *Methods* 51; 101.
- Gagnon, J.A. and **Mowry, K.L.** (2010) Visualization of RNA localization in *Xenopus* oocytes. *Meth. Mol. Biol.* 714; 71.
- Gagnon J.A., **Mowry K.L.** (2011) Molecular motors: Directing traffic during RNA localization. *Crit. Rev. Biochem. Mol. Biol.* 46; 71.
- Medoni, C., **Mowry, K.L.** and Besse, F. (2012) Principles and roles of mRNA localization in animal development. *Development* 139; 3263.
- Pratt, C.A. and **Mowry, K.L.** (2012) Taking a cellular road trip: mRNA transport and anchoring. *Curr. Op. Cell Biol.* 25; 99.
- Gagnon, J.A., Kreiling, J.A., Powrie, E.A., Wood, T.R. and **Mowry, K.L.** (2013) Directional transport mediated by a dynein-dependent step in an RNA localization pathway. *PLoS Biology* 11; e1001551.
- Powrie, E.A., Ciocanel, V. Kreiling, J.A., Gagnon, J.G., Sanstede, B. and **Mowry, K.L.** (2016) Using *in vivo* imaging to measure RNA mobility in *Xenopus laevis* oocytes. *Methods* 15; 30141.
- Ciocanel, V. Kreiling, J.A., Gagnon, J.G., **Mowry, K.L.** and Sanstede, B. (2017) Analysis of active transport by fluorescence recovery after photobleaching. *Biophys. J.* 112; 1714.
- Jeschonek, S.P. and **Mowry, K.L.** (2018) Whole-mount immunofluorescence for visualizing endogenous protein and injected RNA in *Xenopus* oocytes. *Cold Spring Harb. Prot.*, [pdb.prot097022](#).
- Neil, C.R. and **Mowry, K.L.** (2018) Fluorescence *in situ* hybridization of *Xenopus* oocytes. *Cold Spring Harb. Prot.*, [pdb.prot097030](#).
- Mowry, K.L.** (2020) Using the *Xenopus* oocyte toolbox. *Cold Spring Harb. Prot.*, [pdb.top095844](#).

Cabral, S.E. and **Mowry, K.L.** (2020) Organizing the oocyte: RNA localization meets phase separation. *Curr. Topics Dev. Biol.*, 140; 87-118.

Neil, C.R., Jeschonek, S.P., Cabral, S.E., O'Connell, L.C., Powrie, E.A., Otis, J.P., Wood, T.J. and **Mowry, K.L.** (2021) L-bodies are novel RNA-protein condensates driving RNA localization in *Xenopus* oocytes. *Mol. Biol. Cell* 32; ar37.

O'Connell, L.O. and **Mowry, K.L.** (2021) Regulation of spatially-restricted gene expression: Linking RNA localization and phase separation. *Biochem. Soc. Trans.* 49; 2591-2600.

Cabral, S.E., Otis, J.P. and **Mowry, K.L.** (2022) Multivalent interactions with RNA drive recruitment and dynamics in biomolecular condensates in *Xenopus* oocytes. *iScience* 25; 104811.

Publications in Progress

O'Connell, L.O., Hutton, A.K. and **Mowry, K.L.** (2023) A cytoplasmic isoform of hnRNPAB dynamically associates with L-bodies. In preparation.

Non-refereed Publications

Mowry, K.L. and Steitz, J.A. (1988). SnRNP mediators of 3' end processing: Functional fossils? *Trends Biochem. Sci.* 13; 447.

Mowry, K.L. and Cote, C.A. (1999). RNA sorting in *Xenopus* oocytes and embryos. *FASEB J.* 13; 435.

Gagnon, J.A. and **Mowry, K.L.** (2009) RNA transport *in ovo*: Simultaneous visualization of two RNAs. *Mol. Reprod. Dev.* 76; 1115.

Book Chapters

Mowry, K.L. RNA recognition during localization. (1995) In: *Localized RNAs*, H.D. Lipshitz ed., R.G. Landes (Austin) pp. 301.

Abstracts

Gautreau, D. and **Mowry, K.L.** (1995) Cis- and trans-factors with potential roles in Vg1 RNA localization in *Xenopus* oocytes. Northeast Regional Developmental Biology Conference; Woods Hole, MA. Poster presentation by K.L.M.

Gautreau, D. and **Mowry, K.L.** (1995) Two copies of a sub-element from the Vg1 RNA localization sequence direct vegetal localization in *Xenopus* oocytes. Gordon Conference on Developmental Biology; Andover, NH. Poster presentation by K.L.M.

Denegre, J.M., Ludwig, E.R. and **Mowry, K.L.** (1996) Localized maternal proteins revealed by subtractive immunization. Northeast Regional Developmental Biology Conference; Woods Hole, MA. Platform presentation by J. Denegre.

Cote, C.A., Denegre, J.M. Gautreau, D. and **Mowry, K.L.** (1997) Cell polarity and localization in *Xenopus*. Northeast Regional Developmental Biology Conference; Woods Hole, MA. Poster presentation by C. Cote.

Cote, C.A., Gautreau, D., Terry, N.A. and **Mowry, K.L.** (1998) VgRBP60: An RNA binding protein with an essential role in Vg1 RNA localization. Northeast Regional Developmental Biology Conference; Woods Hole, MA. Platform presentation by C. Cote.

- Denegre, J.M. and **Mowry, K.L.** (1998) Dynamic localization of maternal proteins in *Xenopus* oocytes, induced by maturation. Northeast Regional Developmental Biology Conference; Woods Hole, MA. Poster presentation by J. Denegre.
- Volodina, N., Denegre, J.M. and **Mowry, K.L.** (1999) Maturation induced localization of maternal protein. Northeast Regional Developmental Biology Conference; Woods Hole, MA. Poster presentation by N. Volodina.
- Denegre, J.M., Cote, C.A., Gautreau, D., Kress, T.L., Terry, N.A. and **Mowry, K.L.** (1999) A *Xenopus* protein related to hnRNP I has an essential role in Vg1 RNA localization. Northeast Regional Developmental Biology Conference; Woods Hole, MA. Platform presentation by J. Denegre.
- Kress, T.L., Cote, C.A., Gautreau, D., Denegre, J.M. and **Mowry, K.L.** (2000) Do nuclear proteins promote cytoplasmic RNA transport? Northeast Regional Developmental Biology Conference; Woods Hole, MA. Poster presentation by T. Kress.
- Volodina, N., Denegre, J.M. and **Mowry, K.L.** (2000) Vp67 is a maternal protein that is localized to the vegetal cortex in *Xenopus* eggs. Northeast Regional Developmental Biology Conference; Woods Hole, MA. Poster presentation by J. Denegre and N. Volodina.
- Kress, T.L. and **Mowry, K.L.** (2000) Do nuclear proteins promote cytoplasmic RNA transport? Nucleic Acids Gordon Conference; Newport, RI. Poster presentation by T. Kress.
- Yoon, Y.J. and **Mowry, K.L.** (2001) Analysis of *Xenopus* Staufen-containing ribonucleoprotein complexes in oocytes. Northeast Regional Developmental Biology Conference; Woods Hole, MA. Poster presentation by Y.J. Yoon.
- Kress, T.L., Bubunencko, M., Vempati, U.D., King, M.L. and **Mowry, K.L.** (2002) Comparison of vegetal mRNA localization: Is there a common machinery? RNA 2002: Seventh Annual Meeting of the RNA Society; Madison, WI. Poster presentation by T. Kress.
- Yoon, Y.J. and **Mowry, K.L.** (2003) Association between a double-stranded RNA-binding protein, Staufen and and kinesin. Northeast Regional Developmental Biology Conference; Woods Hole, MA. Poster presentation by Y.J. Yoon.
- Messitt, T.J. and **Mowry, K.L.** (2003) Translational control of Vg1 mRNA expression. FASEB Conference on Intracellular RNA Sorting, Transport & Localization; Snowmass, CO. Poster presentation by T. Messitt.
- Lewis, R.A. and **Mowry, K.L.** (2003) Assembly of the Vg1 RNA localization complex: RNP nucleation by nuclear factors. FASEB Conference on Intracellular RNA Sorting, Transport & Localization; Snowmass, CO. Poster presentation by R. Lewis.
- Yoon, Y.J. and **Mowry, K.L.** (2003) Association between a double-stranded RNA-binding protein, Staufen and and kinesin. FASEB Conference on Intracellular RNA Sorting, Transport & Localization; Snowmass, CO. Poster presentation by Y. Yoon.
- Gagnon, J.A., Lewis, R., Messitt, T., Yoon, Y. and **Mowry, K.L.** (2005) Mechanisms directing vegetal RNA localization in the *Xenopus* oocyte. FASEB Conference on Intracellular RNA Sorting, Transport & Localization; Tucson, AZ. Poster presentation by J. Gagnon.
- Messitt, T.J., Yoon, Y.J. and **Mowry, K.L.** (2005) Kinesin I mediates vegetal RNA transport. 45th Annual Meeting of the American Society for Cell Biology; San Francisco, CA. Poster presentation by T.J. Messitt.

- Gagnon, J.A. and **Mowry, K.L.** (2007) Mechanisms directing vegetal RNA localization in the *Xenopus* oocyte. *RNA 2007: The 12th Annual Meeting of the RNA Society*; Madison, WI. Poster presentation by J.A. Gagnon.
- Pratt, C.A. and **Mowry, K.L.** (2008) Coordinated Cytoplasmic Localization and Translational Control of Vg1 mRNA in *Xenopus laevis* Oocytes. *RNA 2008: The 13th Annual Meeting of the RNA Society*; Berlin, Germany. Poster presentation by C.A. Pratt.
- Gagnon, J.A., Kreiling, J.A., and **Mowry, K.L.** (2009) Mechanisms directing localization of maternal determinants revealed by *in vivo* imaging in *Xenopus* oocytes. Northeast Regional Developmental Biology Conference; Woods Hole, MA. Oral presentation by J.A. Gagnon.
- Pratt, C.A., Gagnon, J.A., Kreiling, J.A., and **Mowry, K.L.** (2010) The Vg1 mRNA localization element coordinates motor-driven mRNA localization and translational control in *Xenopus laevis* oocytes. Gordon Conference on Biology of Post-Transcriptional Gene Regulation. Newport, RI. Poster presentation by C.A. Pratt.
- Neil, C.R., Gagnon, J.A. and **Mowry, K.L.** (2011) Unraveling the biochemical mechanisms of RNA localization in the oocyte cytoplasm. Northeast Regional Developmental Biology Conference; Woods Hole, MA. Poster presentation by C.R. Neil.
- Pratt, C.A. and **Mowry, K.L.** (2012) MicroRNA-Mediated Translational Repression of a Localized mRNA in *Xenopus* Oocytes. Annual Meeting of the RNA Society; Ann Arbor, MI. Poster presentation by K.L.M.
- Jeschonek, S.P., Powrie, E.A., and **Mowry, K.L.** (2013) Drawing a Blueprint for Developmental Polarity: Novel components of an mRNA Anchoring Complex in *Xenopus laevis* Oocytes. Northeast Regional Developmental Biology Conference; Woods Hole, MA. Poster presentation by S.P. Jeschonek.
- Jeschonek, S.P., Powrie, E.A. and **Mowry, K.L.** (2015) Prrp: An RNA Binding Protein that Anchors mRNA to the Actin Cytoskeleton. *RNA 2015—The 20th Annual Meeting of the RNA Society*; Madison, WI. Poster presentation by S.P. Jeschonek.
- Neil, C.R., Wood, T.J., Jeschonek, S.P., Carbone, C.B. and **Mowry, K.L.** (2015) Isolation and Characterization of RNA Transport Granules Reveals both Molecular Motors and Stress Granule Components. *RNA 2015—The 20th Annual Meeting of the RNA Society*; Madison, WI. Poster presentation by C.R. Neil.
- Cabral, S.E. and **Mowry, K.L.** (2020) Multivalent interactions with RNA drive recruitment and stabilization of an RBP in novel phase separated condensates in *Xenopus* oocytes. *RNA 2020—The Annual Meeting of the RNA Society*; Held virtually. Poster presentation by S.E. Cabral.
- O'Connell, L.C. and **Mowry, K.L.** (2020) A novel Splice isoform of hnRNPAB localizes to biocondensates in the *Xenopus* oocyte. *RNA 2020—The Annual Meeting of the RNA Society*; Held virtually. Poster presentation by L.C. O'Connell.
- Cabral, S.E. and **Mowry, K.L.** (2021) Multivalent interactions with RNA drive recruitment and stabilization of the RNA-binding protein, PTBP3, in novel phase separated condensates in *Xenopus* oocytes. *RNA 2021—The Annual Meeting of the RNA Society*; Held virtually. Oral presentation by S.E. Cabral.

Invited Lectures

University of Massachusetts School of Medicine, Dept. of Cell Biology (October, 1992)

Rhode Island College, Department of Biology (April, 1994)

Woods Hole, Marine Biological Laboratory, Physiology Course (June, 1995)

University of Rhode Island, Biology Colloquium (February, 1997)

University of Pennsylvania, OB/Gyn Department (February, 1997)

Williams College, Biology Department (December, 1998)

Tufts University School of Medicine, Biochemistry Department (September, 1998)

University of Nebraska Medical Center, Eppley Institute for Cancer Research (October, 1999)

Northwestern University Medical School, Dept. of Cell & Molecular Biology (February, 2000)

Duke University, Department of Genetics (April, 2000)

Fox Chase Cancer Center (May, 2000)

University of Massachusetts Medical School, Dept. of Molecular Biology (January, 2001)

Yale University School of Medicine, Symposium in Honor of J. Steitz (June, 2001)

University of North Carolina, Department of Biochemistry & Biophysics (November, 2001)

Medical College of Wisconsin, Department of Microbiology & Molecular Genetics (December, 2001)

University of California at Santa Barbara, Dept. of Molecular Cellular & Developmental Biology (May, 2002)

University of Miami Medical School, Department of Biochemistry (March, 2003)

Yale University, Department of Molecular, Cellular and Developmental Biology (April, 2004)

University of Pennsylvania, Department of Pharmacology (November, 2005)

University of Wisconsin, RNA Biology Colloquium (November, 2007)

State University of New York–Albany, Department of Biological Sciences (October, 2008)

Albert Einstein College of Medicine, Department of Developmental and Molecular Biology (March, 2009)

University of Pennsylvania, Department of Cell and Developmental Biology (April, 2009)

University of California, Santa Cruz, Department of Molecular, Cell and Developmental Biology (February, 2010)

Cincinnati Children's Hospital, Division of Developmental Biology (October, 2010)

Princeton University, Department of Molecular Biology (November, 2010)

University of Arizona–Tucson, Graduate Program in Cellular Biology & Anatomy (March, 2011)

University of Texas–Austin, Institute for Cellular and Molecular Biology (March, 2011)

The Rockefeller University, Women & Science Lecture (March 2012)

University of Wisconsin, Department of Biochemistry (May, 2012)

Brandeis University, Department of Biology (October, 2012)

Hampton University, Department of Biology (February, 2015)

University of Toronto, Department of Molecular Genetics (May, 2015)

Yale University, Cellular and Molecular Biology Symposium Keynote Speaker (May, 2015)

University of Illinois, Champaign/Urbana, Department of Biochemistry (March, 2017)

University of Massachusetts Medical School, Department of Biochemistry & Molecular Pharmacology (April, 2017)

Johns Hopkins University, Department of Biology (October, 2017)

University of Rhode Island, RI-INBRE Virtual Seminar Series (July, 2020)

Invited talks at meetings

“RNA Localization in *Xenopus* Oocytes” Santa Cruz Summer Conference on Developmental Biology. Santa Cruz, CA; July 1992.

“RNA Localization in *Xenopus* Oocytes” 1993 Northeast Regional Developmental Biology Conference. Woods Hole, MA; March 1993.

“Cis- and Trans-Acting Factors for Vegetal RNA Localization” FASEB Conference on Cellular and Intracellular Transport of RNA. Snowmass, CO; June 1996.

“Cell Polarity and Localization in *Xenopus*” 1997 Northeast Regional Developmental Biology Conference. Woods Hole, MA; April 1997.

“VgRBP60 is an hnRNP Protein with a Role in Vg1 RNA Localization” FASEB Conference on Intracellular RNA Sorting, Transport & Localization. Snowmass, CO; June 1998.

“Cytoplasmic RNA Transport in *Xenopus* Oocytes” Nucleic Acids Gordon Conference. Newport, RI; July 1999.

“Cytoplasmic RNA Transport in *Xenopus* Oocytes” Gordon Conference on Biological Structure and Function. Meriden, NH; August 1999.

“Nuclear Proteins and Cytoplasmic RNA Localization” FASEB Conference on RNA Sorting, Transport and Localization in Differentiation and Development. Snowmass, CO; June 2000.

“Localized mRNA Expression in *Xenopus* Oocytes” EMBO Workshop on Translational Control in Neurobiology and Development. Cala Blava, Mallorca, Spain; May 2002.

“The Vg1 Localization Pathway: From the Nucleus to the Cytoplasm and Beyond” FASEB Conference on Intracellular RNA Sorting, Transport & Localization. Snowmass, CO; June 2003.

“Mechanisms Controlling Local mRNA Expression in *Xenopus* Oocytes” Gordon Conference on Biology of Post-Transcriptional Gene Regulation. Andover, NH; August 2004

“The Vg1 RNA localization complex: RNA and protein partners” FASEB Conference on Intracellular RNA Sorting, Transport & Localization. Tucson, AZ; June 2005.

“Mechanisms Directing the Vg1 Localization Pathway” FASEB Conference on Intracellular RNA Sorting, Transport & Localization. Il Ciocco, Italy; July 2007.

- “RNA transport in the oocyte cytoplasm: How to get there from here” 67th Annual Meeting of the Society for Developmental Biology. Philadelphia, PA; July 2008.
- “Cytoplasmic RNA localization: Motors drive RNA from here to there” FASEB Conference on Intracellular RNA Sorting, Transport & Localization. Saxton’s River, VT; July 2009.
- “RNA Transport in the Cytoplasm: How to Get There from Here” Annual Meeting of the American Society for Biochemistry and Molecular Biology. Anaheim, CA; April 2010.
- “RNA Transport in the Cytoplasm: How to Get There from Here” 19th CDB Meeting; RNA Sciences in Cell and Developmental Biology. Kobe, Japan; May 2010.
- “Motor-driven RNA Transport in the Cytoplasm” Gordon Conference on Biology of Post-Transcriptional Gene Regulation. Newport, RI; July 2010.
- “Molecular Motors: Directing RNA Localization in the Cell Cytoplasm” EMBO Conference on Systems Dynamics of Intracellular Communication: Spatial 2011. Engelberg, Switzerland; May 2011.
- “Directing Traffic during RNA Localization in the Cytoplasm” EMBO Conference on Intracellular RNA Localization and Localized Translation. Barga, Italy; August 2011.
- “RNA Transport in the Cytoplasm: How to Get There from Here” 107th Titisee Conference: RNA Transport. Titisee, Germany; March 2013.
- “Directing Traffic during RNA Localization in the Oocyte Cytoplasm” 2013 Northeast Regional Developmental Biology Conference. Woods Hole, MA; April 2013.
- “Directing Traffic during RNA Localization in the Cell Cytoplasm” 15th International *Xenopus* Conference. Pacific Grove, CA; August 2014.
- “Localized mRNA Expression: Motors and Messages” EMBO/EMBL Symposium: The Complex Life of RNA. Heidelberg, Germany; October 2014.
- “Directing Traffic during RNA Localization in the Cell Cytoplasm” Membrane Trafficking and Polarity Interest Symposium. New York, NY; November 2014.
- “Local mRNA Expression: Motors and Messages” EMBO Conference: RNA Localization and Local Translation. Hersonissos, Greece; June 2015.
- “Local mRNA Expression: Motors and Messages” 12th International Symposium: Horizons in Molecular Biology. Göttingen, Germany; September 2015.
- “RNA Transport in the Cytoplasm: How to get there from here” Cold Spring Harbor Asia Conference on RNA Biology. Suzhou, China; November 2016.
- “RNA Transport in the Cytoplasm: How to get there from here” EMBO Conference: RNA Localization and Local Translation. Barga, Italy; July 2017.
- “Large RNP Transport Granules Drive mRNA Localization” Keystone Symposium: RNA-Protein Interactions. Whistler, Canada; February 2019.
- “Large RNP Transport Granules Drive mRNA Localization” FASEB Conference: RNA Localization and Local Translation. Snowmass, CO; July 2019.
- “Novel RNA-protein condensates drive RNA transport in *Xenopus* oocytes” EMBO/EMBL Symposium: The Complex Life of RNA. Heidelberg, Germany; October 2020.
- “RNA-protein interactions in RNA transport granules” Gordon Conference on Post-Transcriptional Gene Regulation. Newry, ME; July 2022.

“RNA transport in the cytoplasm: Biomolecular condensates drive mRNA localization”
Yale University Symposium in honor of Joan Steitz’s 50 years at Yale. New Haven, CT;
August 2022.

“RNA transport in the cytoplasm: Biomolecular condensates drive mRNA localization”
Keynote Speaker: RNA Transport Meeting. Dusseldorf, Germany; September 2022.

6. Grants

National Institutes of Health (R01), 9/1/93-8/31/22

“Mechanisms of RNA Localization in Oocytes”

Principal Investigator.

National Institutes of Health (T32), 7/1/20-6/30/25

“Interdisciplinary and Inclusive Training in Molecular, Cellular, and Biochemical
Sciences”

Corresponding Principal Investigator.

7. Service

Service to the University

Vice-Chair, Annual Retreat for MCB Graduate Program (1993, 1995)

Biochemistry Search Committee, MCB Department (1994-1995)

MCB Graduate Program Executive Committee, Junior Faculty Representative (1994-1999)

Wayland Collegium, “The Physics-Biology Interface” (1995-1996)

Faculty Advisor, WISE Affinity Group Program (1997-1999)

MCB Graduate Program Admissions Committee (1997-1999)

MD-PhD Program Admissions Committee (1998-1999)

Faculty Liaison to Sheridan Center for Teaching and Learning (1999-2001)

Computational Biology Search Committee, MCB Department (2000-2001)

Chair, MCB Graduate Program Admissions Committee (2000-2001)

Chair, Biochemistry Search Committee, MCB Department (2000-2001)

MCB Department Undergraduate Curriculum Committee (2000-2004)

Search Committee for Chair of Pediatrics, Brown University Medical School (2002-2003)

MCB Graduate Program Curriculum Committee (2001-2005)

Brown University Radiation Safety Committee (2000-2006)

Genetics, Genomics & Proteomics Search Committee (2003-2006)

Committee to Review Criteria for Reappointment, Promotion and Tenure in BioMed (2007)

MCB Graduate Program Executive Committee (2001-present)

Co-PI, MCB Graduate Program Training Grant (2001-2008)

Assistant Director, MCB Graduate Program (2003-2008)

Committee on Medical Faculty Appointments (2006-2008)

Vice-Chair, MCB Department (2006-2008)

Leadership Alliance Mentor (2009, 2011)

Chair, MCB Department (2009-present)
BioMed IT Advisory Committee (2009-2011)
Knowledge District Advisory Committee (2011)
Dean of Biology and Medicine Search Committee (2012-2013)
Translational Seed Grant Committee (2014)
Provost Search Committee (2014)
Faculty host for Brown University honorary degree recipient, Dr. A. Horowich (2014)
University Chairs Agenda Committee (2015-2016)
Search Committee for Executive Dean of Administration (2015-2016)
Commencement Speaker, Brown University Biology (2016)
Search Committee, Chair of Ob/Gyn, Women and Infants Hospital and Warren Alpert Medical School (2019-2020)
MPPB Department Task Force (2020)
Department of Biomedical Engineering Task Force (2020)
Brown University Core Research Infrastructure Advisory Committee (2018-present)
University Chairs Agenda Committee (2021-2022)
Task Force on Doctoral Education (2021-2022)
PI, MCB Graduate Program T32 Training Grant (2008-present)
MCB Graduate Program Executive Committee (2008-present)
Advisory Board, Office of Women in Medicine and Science (2009-present)
Chair, MCB Department (2009-present)

Service to the Profession

Session Chair, 1994 Northeast Regional Developmental Biology Conference (1994)
Session Chair, 1997 Northeast Regional Developmental Biology Conference (1997)
Co-organizer, 2000 Northeast Regional Developmental Biology Conference (2000)
National Institutes of Health, CDF-1 Study Section, *ad hoc* (2001)
National Institutes of Health, CDF-1 Study Section, member (2001-2004)
External Review Committee, Graduate Program in Cell Biology, University of Connecticut Health Sciences Center (2002)
Session Chair, EMBO Workshop on Translational Control in Neurobiology and Development (2002)
Participated in the NOVA program, "The Secret of Photo 51" (2003)
Co-chair, FASEB Conference on Intracellular RNA Sorting, Transport & Localization (2003)
National Institutes of Health, MGC Study Section, member (2004-2005)
Chair, FASEB Conference on Intracellular RNA Sorting, Transport & Localization (2005)
Session Coordinator, *RNA 2006: The 11th Annual Meeting of the RNA Society* (2006)
National Institutes of Health, MGC Study Section, *ad hoc* (2007)

- Session Chair, EMBO Workshop on Intracellular RNA Transport and Localized Translation (2007)
- Judge for oral and poster presentations, Annual Biomedical Research Conference for Minority Students (2008)
- NIH Challenge grant reviewer for BDA and CB IRGs (2009)
- Session Chair, 19th CDB Meeting; Kobe, Japan (2010)
- Session Chair, EMBO Workshop on Intracellular RNA Transport and Localized Translation (2011)
- External Review Committee, Graduate Program in Cellular and Molecular Biology, Boston University (2012)
- Judge for oral and poster presentations, Annual Biomedical Research Conference for Minority Students (2012)
- National Institutes of Health, BRT-A (renamed TWD-A) Study Section, member (2010-2014)
- Tenure Review Committee, Harvard University Faculty of Arts and Sciences (2014)
- Session Chair, EMBO/EMBL Symposium: The Complex Life of RNA. Heidelberg, Germany (2014)
- Session Chair, EMBO Conference: RNA Localization and Local Translation. Hersonissos, Greece (2015)
- National Institutes of Health, TWD-A Study Section, *ad hoc* (2015)
- Editor, Chapter 3 "Oocytes and Oogenesis" in "Xenopus: A Laboratory Manual", Cold Spring Harbor Press (2015-2019); H. Sive, Editor
- Session Chair, Cold Spring Harbor Asia Conference on RNA Biology. Suzhou, China (2016)
- Session Chair, EMBO Conference: RNA Localization and Local Translation. Barga, Italy (2017)
- External Review of Research Unit for Deutsche Forschungsgemeinschaft (2018)
- Session Chair, Keystone Symposium: RNA-Protein Interactions. Whistler, Canada (2019)
- Session Chair, FASEB Conference: RNA Localization and Local Translation. Snowmass, CO (2019)
- National Institutes of Health, TWD-B Study Section, *ad hoc* (2021)
- External reviewer of faculty promotions for:
- Boston College, Department of Biology (2002)
 - University of Toronto, Department of Biochemistry (2004)
 - Princeton University, Department of Molecular Biology (2007)
 - Yale University, Department of Cell Biology (2009)
 - University of Wisconsin-Madison, Department of Biomolecular Chemistry (2011)
 - Albert Einstein College of Medicine, Department of Developmental & Molecular Biology (2013)
 - University of Pennsylvania Perelman School of Medicine (2013)
 - Harvard University Medical School, Department of Genetics (2015)
- External examiner of Ph.D. theses for:
- Tufts University, Sackler School of Biomedical Sciences (1999)

University of Miami, Department of Cell Biology (2003)
Harvard University, Division of Medical Sciences (2001)
University of Toronto, Graduate Department of Zoology (2003)
University of Massachusetts Medical School, Interdisciplinary Graduate Program (2006)
Harvard Medical School, Program in Biological and Biomedical Sciences (2015)
University of Toronto, Department of Molecular Genetics (2015)
University of Massachusetts Medical School, Department of Biochemistry and Molecular Pharmacology (2016)

Peer review of grant proposals for:

National Institutes of Health, National Science Foundation, The March of Dimes, United States Israel Binational Science Foundation, The Wellcome Trust, French National Research Agency (ANR)

Peer review of manuscripts (1992-present) for journals including: *Biophysical Journal*, *Cell*, *Cell Reports*, *Development*, *Developmental Biology*, *Developmental Cell*, *Developmental Dynamics*, *Differentiation*, *EMBO Journal*, *Genes & Development*, *Journal of Biological Chemistry*, *Journal of Cell Biology*, *Journal of Cell Science*, *Journal of Neuroscience*, *Mechanisms of Development*, *Methods*, *Molecular Biology of the Cell*, *Molecular Cell*, *Molecular & Cellular Biology*, *Nature*, *Nature Cell Biology*, *Nature Structural and Molecular Biology*, *Neuron*, *Nucleic Acids Research*, *PLoS Biology*, *PLoS One*, *Proceedings of the National Academy of Sciences*, *RNA*, *Science*, and *Traffic*.

8. Honors

1989-1992 Helen Hay Whitney Fellow
1997-1998 Salomon Faculty Research Award
1997-1999 Vartan Gregorian Assistant Professor
2005 Nomination for Northeast Representative; The Society for Developmental Biology
2005-2016 Member, Faculty of 1000
2006 Brown University "Best of WebCT" Award
2007 Elizabeth H. Leduc Award for Excellence in Teaching in the Life Sciences
2009 Nomination for Secretary; The Society for Developmental Biology
2009-present Robin Chemers Neustein Professor of Biomedicine
2010 Nomination for Board of Directors; The RNA Society
2012 Nomination for Board of Directors; The RNA Society
2014 Dean's Award for Excellence in Graduate and Postdoctoral Teaching and Mentoring in the Biological Sciences

9. Teaching (last five years)

Regular Courses

Fall 2018 BIOL2150 Scientific Communication (5 students) 1.00 cumulative teaching score from student critique (1-5 where 1 is best)

Fall 2019	BIOL2000A	Topics in MCDB (3 students)	4.67 overall instructor effectiveness from student critique (1-5 where 5 is best)
Fall 2020	BIOL2000A	Topics in MCDB (8 students)	4.88 overall instructor effectiveness from student critique (1-5 where 5 is best)
Fall 2021	BIOL2150	Scientific Communication (8 students)	4.80 overall instructor effectiveness from student critique (1-5 where 5 is best)
Fall 2022	BIOL2010A	Introduction to Molecular Research in the Life Sciences (11 students)	3.67 overall instructor effectiveness from student critique (1-5 where 5 is best)

Independent Study

Spring 2018	4 graduate students (BIOL 2980)
Fall 2018	2 graduate students (BIOL 2980)
Spring 2019	2 graduate students (BIOL 2980)
Fall 2019	2 graduate students (BIOL 2980) 1 undergraduate student (BIOL 1960)
Spring 2020	2 graduate students (BIOL 2980)
Fall 2020	2 graduate students (BIOL 2980)
Spring 2021	2 graduate students (BIOL 2980)
Fall 2021	2 graduate students (BIOL 2980) 1 undergraduate student (BIOL 1950)
Spring 2022	1 undergraduate student (BIOL 1960)
Fall 2022	1 undergraduate student (BIOL 1960)

Honors Theses

Katherine Mitsouras; Honors, Sc.B. Biochemistry (1995)
Rumey Ishizawar; Honors, Sc.B. Biology (1996)
Linda Fu; Undergraduate, Honors Sc.B. Biology (1996)
Natalie Terry; Honors, Sc.B. Biochemistry (1998)
Megan Rokop; Honors, Sc.B. Biology (1999)
Fiona Koumoudjian; Honors, Sc.B. Biology (1999)
Jennifer Hou; Honors, Sc.B. Biochemistry (2002)
Lindsay Kuroki; Honors, Sc.B. Biology (2004)
Curtis Henn; Honors, Sc.B. Biochemistry (2005)
Aaron Prosnitz; Honors, Sc.B. Biology (2005)
Karen Kan; Honors, Sc.B. Biology (2006)
Jonathan Herman; Honors, Sc.B. Biochemistry (2007); Fulbright Scholar Awardee

Carly Stewart; Honors, Sc.B. Biology (2008)

Emily Schwartz; Honors, Sc.B. Biology (2008)

Putzer Hung; Honors, Sc.B. Biochemistry (2010)

Catherine Carbonne, Honors, Sc.B. Biochemistry (2012); Best Thesis Award

Anika Hutton, Sc.B. Biology (2022); Richard J. Goss Prize in Experimental Biology

Master's Theses

Joshua Farkas; Combined BS/MS (2002)

Ph.D. Theses

Colette Cote; Ph.D., 1998

“Critical RNA-Protein Interactions within a Vg1 RNP Transport Complex”

Natalia Volodina; Ph.D., 2001

“Isolation and Characterization of Asymmetrically Localized Antigens from *Xenopus* Oocytes and Eggs”

Tracy Kress; Ph.D., 2003

“Dynamics and Assembly of Vegetally Localized RNP Complexes in *Xenopus laevis* Oocytes”

Young Yoon; Ph.D., 2004

“Role of *Xenopus* Staufen and Kinesin 1 in Vegetal RNA localization”

Raymond Lewis; Ph.D., 2006

“RNA localization in *Xenopus* Oocytes: Assembling a Transport RNP”

Timothy Messitt; Ph.D., 2006

“Mechanisms of RNA Transport and Translational Control in the *Xenopus laevis* Oocyte”

James Gagnon; Ph.D., 2010

“Insights into Directional Motor-Driven RNA Localization from the *Xenopus* Oocyte”

Catherine Pratt; Ph.D., 2012

“Micro RNA-mediated Translational Repression in the *Xenopus* Oocyte”

Samantha Jeschonek; Ph.D., 2018

“Characterization of Vegetal Transport Granules in *Xenopus laevis* Oocytes”

Christopher Neil; Ph.D., 2018

“Insights into Maternal mRNA Localization: Characterization of a New Cytoplasmic RNA Granule”

Sarah Cabral; Ph.D., 2021

“Organizing the Oocyte: Identification and Characterization of a Novel Biomolecular Condensate in *Xenopus*”

Liam O’Connell; Ph.D., 2021

“Investigating Protein Localization to L-bodies”

Academic Advising

Freshman Advisor; 19/20, 20/21

Sophomore Advisor; 93/94, 97/98, 20/21, 21/22 (5 current advisees)

Concentration Advisor for Biology; 1994-1999 (~25 advisees past)

Biochemistry Concentration Advising; 1999-2006, 2019-2022 (10 current advisees)

Thesis Committees for the Neuroscience Graduate Program (2 students, past)

Thesis Committees for the MCB Graduate Program (1 student, current; 25 students, past)