M. Joan Curcio, Ph.D.

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EDUCATION

1987	**Ph.D.**	Genetics, George Washington University, Washington D.C. Dissertation Title: Transcriptional and translational mechanisms of globin gene expression in a mouse model of ß-thalassemia Dissertation advisor: Brian Safer, M.D., Ph.D.
1979	**B.S.**	with Honors, Biology, Guilford College, Greensboro, NC

PROFESSIONAL POSITIONS

2006-present	**Research Scientist VI**, Laboratory of Developmental Genetics, Wadsworth Center, Albany, NY
2001-2006	**Research Scientist V**, Laboratory of Developmental Genetics, Wadsworth Center, Albany, NY
1993-2001	**Research Scientist IV**, Laboratory of Developmental Genetics, Wadsworth Center, Albany, NY
1986-1992	**Postdoctoral Fellow** (laboratory of Dr. David Garfinkel), Frederick Cancer Research and Development Center, Frederick, MD
1981-1986	**Graduate Research Assistant** (laboratory of Dr. Brian Safer), National Heart, Lung and Blood Institute, NIH, Bethesda, MD
1979-1980	**Research Technician**, Flow Laboratories, McLean, VA

ACADEMIC APPOINTMENTS

2005-present	**Adjunct Professor**, Department of Biology, Rensselaer Polytechnic Institute, Troy, NY
2004-present	**Adjunct Associate Professor**, Department of Biology, State University of New York at Albany, NY
2002-present	**Associate Professor**, Department of Biomedical Sciences, School of Public Health, State University of New York at Albany, NY
1993-2002	**Assistant Professor**, Department of Biomedical Sciences, School of Public Health, State University of New York at Albany, NY

AWARDS

1988-1990	National Research Service Award Postdoctoral Fellowship
1986	Graduate Student Research Award, George Washington University
1983	Columbian Women Graduate Scholarship, George Washington University

FUNDING

R01 GM52072-13 (M.J. Curcio, P.I.) 8/01/95 – 7/31/09
NIH/NIGMS
Regulation of retrotransposition in *S. cerevisiae*.

R01 AI65301-03 (B.R. Cullen, P.I.) 2/15/05-3/31/10
NIH/NIAID
Effect of APOBEC3G on retroviruses and retrotransposons

1 T32 GM067545-03 (J. Dordick, P.I.) 07/01/04-06/30/09
NIH
Biomolecular Science and Engineering Training Grant
This is a joint training grant in biotechnology between Rensselaer Polytechnic Institute (RPI) and the Wadsworth Center. Dr. Curcio is a mentor/faculty member.

PROFESSIONAL ACTIVITIES

Member, Editorial Board, *Eukaryotic Cell*, 2006-2008

Member, Peer Review Committee on Molecular and Cell Biology of Cancer, American Cancer Society, 2002-2007 (**Vice-Chair**, 2005-2006; **Chair**, 2006-2007)

Ad hoc manuscript review for *Science, Nature, Cell, Proceedings of the National Academy of Sciences, Genetics, Molecular and Cellular Biology, Journal of Molecular Biology, Journal of Virology, Cellular and Molecular Life Sciences, Gene, Eukaryotic Cell, BMC Genomics, PLoS Genetics*

PUBLICATIONS

Beauregard, A., M.J. Curcio and M. Belfort. 2008. The take and give between retrotransposable elements and their hosts. *Ann. Rev. Genet.* In press.

Maxwell, P.H. and M.J. Curcio. 2008. Incorporation of Y'-Ty1 cDNA destabilizes telomeres in *Saccharomyces cerevisiae* telomerase mutants. *Genetics.* In press.

Maxwell, P.H. and M.J. Curcio. 2007. Retrosequence formation restructures the yeast genome. *Genes Dev.* 21:3308-18.

Curcio, M.J., Kenny, A.E., Moore, S., Garfinkel, D.J., Weintraub, M., Gamache, E.R., Scholes, D.T. 2007. S-phase checkpoint pathways stimulate the mobility of the retrovirus-like transposon, Ty1. *Mol. Cell. Biol.* **27**: 8874-85.

Maxwell, P.H. and M.J. Curcio. 2007. Host factors that control LTR-retrotransposons in *Saccharomyces cerevisiae*: implications for the regulation of mammalian retroviruses. *Eukaryotic Cell*. **6:** 1069-80.

Curcio, M.J. and Belfort, M. 2007. The beginning of the end: links between ancient retroelements and modern telomerases. *Proc. Natl. Acad. Sci. USA*. **100**: 15736-41.

Mou, Z., A.E. Kenny and M. J. Curcio. 2006. Hos2 and Set3 promote integration of Ty1 retrotransposons at tRNA genes in *Saccharomyces cerevisiae*. *Genetics.* 172: 2157-67.

Dutko, J. A., A. Schafer, A.E. Kenny, B.R. Cullen and M.J. Curcio. 2005. Inhibition of a yeast LTR-retrotransposon by human APOBEC3 cytidine deaminases. *Curr. Biol.* 15: 661-6.

Maxwell, P.H., C. Coombes, A.E. Kenny, J.L. Lawler, J.D. Boeke and M.J. Curcio. 2004. Ty1 mobilizes subtelomeric Y' elements in telomerase-negative *Saccharomyces cerevisiae* survivors. *Mol. Cell. Biol.* 24: 9887-98.

Laplaza, J.M., M. Bostick, D.T. Scholes, M.J. Curcio and J. Callis, J. 2004. *Saccharomyces cerevisiae* ubiquitin-like protein Rub1p conjugates to cullin proteins Rtt101p and Cul3p *in vivo*. *Biochem. J.* 377: 459-67.

Scholes, D.T., A.E. Kenny, E.R. Gamache, Z. Mou and M.J. Curcio. 2003. Activation of an LTR-retrotransposon in response to telomere erosion. *Proc. Natl. Acad. Sci. USA* 100: 15736-41.

Curcio, M.J. and K. M. Derbyshire. 2003. The outs and ins of transposition: From Mu to Kangaroo. *Nat. Rev. Mol. Cell Biol.* 4: 821-902.

Bryk, M., S. D. Briggs, B.D. Strahl, M. J. Curcio, C.D. Allis, and F. Winston. 2002. Set1, a factor required for methylation of histone H3, regulates rDNA silencing in *Saccharomyces cerevisiae* by a Sir2-independent mechanism. *Curr. Biol.* **12**: 165-170.

Scholes, D.T., M. Banerjee, B. Bowen and M.J. Curcio. 2001. Multiple regulators of Ty1 transposition in *Saccharomyces cerevisiae* have conserved roles in genome maintenance. *Genetics.* **159**: 1449-1465.

Bryk, M., M. Banerjee, D. Conte and M.J. Curcio. 2001. The Sgs1 helicase of *Saccharomyces cerevisiae* inhibits retrotransposition of Ty1 multimeric arrays. *Mol. Cell. Biol.* **21**: 5374-5388.

Conte, D. and M.J. Curcio. 2000. Fus3 controls Ty1 transpositional dormancy through the invasive growth pathway. *Mol. Micro.* **35**: 415-427.

Curcio, M.J., and D.J. Garfinkel. 1999. Inhibition of Ty1 retrotransposition by Fus3 and NER/TFIIH: new lines of host defense. *Trends Genet.* **15**: 43-45.

Conte, D., E. Barber, M. Banerjee, D.J. Garfinkel and M.J. Curcio. 1998. Posttranslational regulation of Ty1 retrotransposition by the MAP kinase, Fus3. *Mol. Cell. Biol.* **18**: 2502-2513.

Lee, B.-S., C.P. Lichtenstein, B. Faiola, L.A. Rinckel, W. Wysock, M.J. Curcio and D.J. Garfinkel. 1998. Posttranslational inhibition of Ty1 retrotransposition by nucleotide excision repair/ transcription factor TFIIH subunits Ssl2p and Rad3p. *Genetics* **148**: 1743-1761.

Garfinkel, D.J., M. J. Curcio and V. Smith. 1998. Ty mutagenesis. *In* Methods in Microbiology: Yeast Gene Analysis. (A.J.P. Brown and M. F. Tuite, eds.) pp 101-118. Academic Press, San Diego. CA

Bryk, M., M. Banerjee, K.E. Knudsen, M. Murphy, D.J. Garfinkel and M.J. Curcio. 1997. Transcriptional silencing of Ty1 elements in the *RDN1* locus of yeast. *Genes Dev.* **11**: 255-269.

Curcio, M.J., and R.H. Morse. 1996. *Ty*ing together integration and chromatin. *Trends Genet*. **12**: 436-438.

Dalgaard, J.Z., Banerjee, M. and Curcio, M.J. 1996. A novel Ty1-mediated fragmentation technique for native and artificial yeast chromosomes reveals that the mouse *Steel* gene is a hotspot for Ty1 integration. *Genetics* **143**: 673-683.

Curcio, M.J., and M. Belfort. 1996. Retrohoming: cDNA-mediated mobility of group II introns requires a catalytic RNA. *Cell* **84**: 9-12.

Curcio, M.J., and D.J. Garfinkel. 1994. Heterogeneous functional Ty1 elements are abundant in the *Saccharomyces cervisiae* genome. *Genetics* **136**: 1245-1259.

Curcio, M.J., and D.J. Garfinkel. 1992. Posttranslational control of Ty1 retrotransposition occurs at the level of protein processing. *Mol. Cell. Biol*. **12**: 2813-2825.

Curcio, M.J., and D.J. Garfinkel. 1991. Regulation of retrotransposition in *Saccharomyces cerevisiae*. *Mol. Microbiol*. **5**: 1823-1829.

Curcio, M.J., and D.J. Garfinkel. 1991. Single-step selection for Ty1 element retrotransposition. *Proc. Natl. Acad. Sci. USA.* **88**: 936-940.

Curcio, M.J., A.-M. Hedge, J.D. Boeke and D.J. Garfinkel. 1990. Ty RNA levels determine the spectrum of retrotransposition events that activate gene expression. *Mol. Gen. Genet*. **220**: 213-221.

Garfinkel, D.J., M.J. Curcio, S.D. Youngren and N.J. Sanders. 1989. The biology and exploitation of the retrotransposon Ty in *Saccharomyces cerevisiae*. *Genome* **31**: 909-919.

Curcio, M.J., N.J. Sanders and D.J. Garfinkel. 1988. Transpositional competence and transcription of endogenous Ty elements in *Saccharomyces cerevisiae*: Implications for regulation of transposition. *Mol. Cell. Biol*. **8**: 3571-3581.

Curcio, M.J., P. Kantoff, M. Schafer, W.F. Anderson and B. Safer. 1986. Compensatory increase in levels of ß-minor globin in ß-thalassemia is under translational control. *J. Biol. Chem*. **261**: 16126-16132.

Huberman, M., P.E. Berg, M.J. Curcio, J. DiPietro, A.S. Henderson and W.F.Anderson. 1984. Fate and structure of DNA microinjected into mouse Tk^- L cells. *Exp. Cell Res*. **153**: 347-362.

PATENTS

Garfinkel, D.J., D.V. Nissley, M.J. Curcio and J.N. Strathern. 1998. Simple method for detecting inhibitors of retroviral replication. U.S. Patent 5, 714, 313.

INVITED TALKS AND SEMINARS (2002-present)

Conference Talk

2008 International Conference on Transposable Elements, Saint-Malo, France
2007 FASEB Conference on Mobile Elements in Mammalian Genomes, Tucson, AZ
2006 ASM Conference on Mobile DNA, Banff, Alberta, Canada
2005 FASEB Conference on Mobile Elements in Mammalian Genomes, Tucson, AZ
2004 EMBO Workshop Molecular Mechanisms of Transposition, Its Regulation and Evolution, Roscoff, France (**Session Chair**)
2003 Keystone Symposium on Transposition and Other Genome Rearrangements, Sante Fe, NM, (**Session Chair**)

Invited Seminars

2008 Department of Biochemistry, Medical University of South Carolina
2007 Hudson Valley RNA Club, Albany NY (**Inaugural Seminar**)
2007 Mobile Genetic Element Cluster, Marine Biological Laboratory, Woods Hole, MA
2006 Department of Molecular Genetics and Microbiology, Duke University, Durham, NC
2005 National Institute of Child Health and Human Development, NIH, Washington, DC
2005 Center for Virus Research, University of California, Irvine, Irvine, CA
2005 Sofia University, Sofia, Bulgaria
2004 Department of Biochemistry, University of Western Ontario, London, Ontario, Canada
2003 Department of Microbiology & Immunology, McGill University, Montreal, Canada
2002 University of Copenhagen, Denmark

WADSWORTH CENTER PROGRAM ACTIVITIES

Wadsworth Genomics Core Oversight Committee, 2007
Wadsworth Interim Funding Review Board, 2006-present

Wadsworth Peer Review Board, 2004-2007
Postdoctoral Association Steering Committee, 2003-2006
Wadsworth Intellectual Property Evaluation Committee, 1999-2006 (**Chair**, 2003-2006)
Chair, Wadsworth Model Organisms Array Core Committee, 2001
Wadsworth Biochemistry Core Committee, 1996-2000
Dickerman Award Lecture Committee, 1997
Wadsworth Seminar Series Committee, 1994-1997
Axelrod Symposium Committee, 1994
Coordinator, Student-Postdoc Seminar Series at DAI ("Breakfast Club"), 1993-1998
Co-coordinator, Molecular Genetics Program, 1993

TRAINING AND MENTORING ACTIVITIES

Postdoctoral Trainees

- Mary E. Bryk, American Cancer Society Postdoctoral Fellowship, 1995-1997
  Title: Regulation of Ty1 elements in the *RDN1* locus of yeast.
- Derek T. Scholes, 1997-2004 (Recipient of the 2nd annual Robert J. Colinas award for an outstanding publication as a postdoctoral fellow.)
- Patrick H. Maxwell, 2002-present

Dissertation Mentor:

- Radostina Stamenova-Stamenova, Sofia University, 2006-present
- James Dutko, Department of Biology, SUNY Albany, 2004-present
- Eric R. Gamache, School of Public Health, SUNY Albany, 2004-2005
- Darryl Conte, School of Public Health, SUNY Albany, 1995-2000

Masters Thesis Mentor:

- Jennifer Risler, School of Public Health, SUNY Albany, 2005-2007
- Zhongming Mou, School of Public Health, SUNY Albany, 2001-2003

Undergraduate Trainees

- NSF-Sponsored REU Program: Michael Murphy, Ellen Barber, Jennifer Snyder, Alston Alcid, Karen Artilles, Brian Bowen, William DeRuso, Chris Hines, Summer Thyme, Johanna Aguilar, Claire Malone (1993-2007)
- University at Albany Summer Research Program: O'neal Severin, Luisa Torres (2005-2006)
- University at Albany undergraduate laboratory internship: Marc Orlowski (1995-1996), Brian Bowen (1998-1999), Eric Gamache (1999-2000), Joseph Smith (2001-2002), Matthew Weintraub (2002-2004) and Soobin Maeng (2007-2008). Matthew Weintraub received the *Presidential Award for Undergraduate Research* and the *Glenn Bumpus Award for Undergraduate Research* from the University at Albany for research conducted in my laboratory.

UNIVERSITY TEACHING ACTIVITIES

Department of Biomedical Sciences, University at Albany

BMS500B: Molecular Biology and Genetics, **Coordinator and Lecturer** (1.5 lecture hours) Spring, 2004, 2005; **Lecturer** (4 lecture hours/ Spring, 2001; 2 lecture hours/Spring, 2006-2008)

BMS606: Biology of Model Organisms, **Lecturer** (1.5 lecture hours/ Fall, 2001, 2003; 3 lecture hours/ Fall, 2005)
BMS504B: **Co-coordinator and Lecturer**, Genome Rearrangements Module (4 lecture hours/ Spring 1999, 2000)
BMS665: **Co-director** of Journal Club on Genome Rearrangements, Spring 1996, 1997; **Co-director** of Journal Club on Yeast Genome Dynamics, 2006-present.
BMS605: Molecular Biology and Genetics, **Lecturer** (4 lecture hours/ Spring 1995-1998)

Department of Biology, Rensselaer Polytechnic Institute
Graduate Cell Biology Course, Department of Biology, **Lecturer** (2 lecture hours) Spring 2006, 2007

UNIVERSITY SERVICE ACTIVITIES

School of Public Health
Accreditation Sub-Committee on Mission, Evaluation & Planning, 2006-2007
Chair of Council, 2002-2003
Chair of Council Committee on Diversity and Recruitment, 2001-2002
Chair of Council Committee on Research, 1999-2001

Department of Biomedical Sciences
Director, Molecular Genetics Track, 2008
Curriculum Committee Member, 2004-2007
Chair, Genetics Track Curriculum Committee, 2005
Admissions Committee Member, REU Summer Program, 1994, 2001-2004
School of Public Health Council Representative for the Department of Biomedical Sciences, 1999-2003
Judge, Student Poster Day, 2000-2002
Graduate Admissions Committee, 1993-1998 (**Co-chair** 1996-1997; **Chair** 1997-1998)
Consultant group participant for AMC/BMS curriculum change, Spring 1998
Coordinator, Roundtable on applying to graduate school, REU program, 1998
Participant in workshop on making Wadsworth resources available to local high schools, 1998
Lab tours and roundtable discussion, Undergraduate Open House, November 1996