

BIOGRAPHICAL SKETCH

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NAME Grabczyk, Edward L.	POSITION TITLE Associate Professor		
eRA COMMONS USER NAME EGRABC			
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
University of California, Los Angeles, CA	B.S.	1982	Psychology-Biology
Harvard University, Cambridge, MA	Ph.D.	1992	Cell & Developmental Biology
Massachusetts General Hospital, Boston MA	postdoctoral	1992-1995	Neuroscience
National Institutes of Health, Bethesda, MD	IRTA Fellow	1995-2000	DNA Repeat Expansion

A. Positions and Honors.

Positions and Employment

- 2000-2001 Staff Fellow, National Institute of Diabetes and Digestive and Kidney Diseases
National Institutes of Health, Bethesda, Maryland
- 2001-2008 Assistant Professor, Department of Genetics
Louisiana State University Health Sciences Center, New Orleans, Louisiana
- 2008- Associate Professor, Department of Genetics
Louisiana State University Health Sciences Center, New Orleans, Louisiana

Other Experience and Professional Memberships

- 2006- Institutional Biosafety Committee LSUHSC
- 2002-2004 Core Labs Steering Committee LSUHSC
- 2003-2005 Research Space Advisory Committee LSUHSC
- 2002- Member, American Association for the Advancement of Science
- 2002- Member, American Society for Biochemistry & Molecular Biology
- 2002-2004 Member, American Society of Human Genetics
- 2003-2004 Member, Society for Neuroscience

Honors

- 1997 National Institutes of Health Fellows Award for Research Excellence

B. Selected peer-reviewed publications (in chronological order).

1. Federoff, H.J., Grabczyk, E. and Fishman, M.C. (1988) Dual regulation of GAP-43 gene expression by nerve growth factor and glucocorticoids. *J. Biol. Chem.*, 263, 19290-19295.
2. De la Monte, S.M., Federoff, H.J., Ng, S.C., Grabczyk, E. and Fishman, M.C. (1989) GAP-43 gene expression during development: persistence in a distinctive set of neurons in the mature central nervous system. *Brain Res. Dev. Brain Res.*, 46, 161-168.
3. Grabczyk, E., Zuber, M.X., Federoff, H.J., Ng, S.C., Pack, A. and Fishman, M.C. (1990) Cloning and Characterization of the Rat Gene Encoding GAP-43. *Eur. J. Neurosci.*, 2, 822-827.
4. Vanselow, J., Grabczyk, E., Ping, J., Baetscher, M., Teng, S., and Fishman, M. C. (1994) GAP-43 transgenic mice: Dispersed genomic sequences confer a GAP-43-like expression pattern during development and regeneration. *J. Neurosci.* 14, 499-510
5. Grabczyk, E. and Fishman, M. C. (1995) A long purine•pyrimidine homopolymer acts as a transcriptional diode. *J. Biol. Chem.* 270, 1791-1797
6. Lavedan, C., Grabczyk, E., Usdin, K., and Nussbaum, R. L. (1998) Long uninterrupted CGG repeats within the first exon of the human FMR-1 gene are not intrinsically unstable in transgenic mice. *Genomics* 50, 229-240

7. Grabczyk, E. and Usdin, K. (1999) Generation of microgram quantities of trinucleotide repeat tracts of defined length, interspersion pattern and orientation. *Analytical Biochemistry*, 267, 241-243
8. Grabczyk, E. and Usdin, K. (2000) The GAA•TTC triplet repeat expanded in Friedreich's ataxia impedes transcription elongation by T7 RNA polymerase in a length and supercoil dependent manner. *Nucleic Acids Research*, 28, 2815-2822. PMID: PMC102661.
9. Usdin, K. and Grabczyk, E. (2000) DNA repeat expansions and human disease. *Cell. Mol. Life Sci.*, 57, 914-931.
10. Grabczyk, E. and Usdin, K. (2000) Alleviating transcript insufficiency caused by Friedreich's ataxia triplet repeats. *Nucleic Acids Research*, 28, 4930-4937. PMID: PMC115239.
11. Grabczyk, E., Kumari, D. and Usdin, K. (2001) Fragile X syndrome and Friedreich's ataxia: Two different paradigms for repeat induced transcript insufficiency. *Brain Research Bulletin*, 56, 367-373
12. Sammarco, M. C. and Grabczyk, E. (2005) A series of bidirectional tetracycline-inducible promoters provides coordinated protein expression. *Analytical Biochemistry*, 346, 210-216
13. Entezam, A., Biacsi, R., Orrison, B., Saha, T., Hoffman, G.E., Grabczyk, E., Nussbaum, R.L. and Usdin, K. (2007) Regional FMRP deficits and large repeat expansions into the full mutation range in a new Fragile X premutation mouse model. *Gene*, 395, 125-134. PMID: PMC1950257.
14. Grabczyk, E., Mancuso, M., and Sammarco, M. C. (2007) A persistent RNA•DNA hybrid formed by transcription of the Friedreich ataxia triplet repeat in live bacteria, and by T7 RNAP in vitro. *Nucleic Acids Research*, 35, 5351-5359. PMID: PMC2018641.
15. Sammarco, M.C., Ditch, S., Banerjee, A. and Grabczyk, E. (2008) Ferritin L and H Subunits Are Differentially Regulated on a Post-transcriptional Level. *J. Biol. Chem.*, 283, 4578-4587.
16. Banerjee*, A., Sammarco*, M. C., Ditch, S., Wang, J. and Grabczyk, E. (2009) A Novel Tandem Reporter Quantifies RNA Polymerase II Termination in Mammalian Cells. *PLoS ONE* 4(7): e6193. PMID: PMC2702688.
17. Banerjee, A., Sammarco, M. C., Ditch, S., and Grabczyk, E. (2009) A dual reporter approach to quantify defects in mRNA processing. *Analytical Biochemistry*, 395, 237-243. PMID: PMC2760683.
18. Ditch, S., Sammarco, M. C., Banerjee, A. and Grabczyk, E. (2009) Progressive GAA•TTC Repeat Expansion in Human Cell Lines. *PLoS Genet* 5(10): e1000704.

C. Research Support

Ongoing Research Support

1 R01 NS046567 Grabczyk (PI) 9/01/2005 – 07/31/2010

NIH/NINDS

Mechanisms contributing to frataxin deficiency.

The long-term objective of this project is to investigate ways to alleviate the reduction in frataxin gene expression caused by expanded GAA•TTC trinucleotide tracts in Friedreich's ataxia.

Role: PI

3 R01 NS046567-03S1 Grabczyk (PI)

NIH Administrative Supplement in response to NOT-NS-08-009: "Administrative Supplements for High-Quality Low-Cost Monoclonal Antibodies for Studies of the Nervous System"

3 R01 NS046567-04S1 Grabczyk (PI) 07/21/2009 – 07/31/2010

NIH Administrative Supplement: ARRA summer supplement. In response to NOT-OD-09-060: Recovery Act Administrative Supplement to Provide Summer Research Experiences for Undergraduate Students.

Friedreich's Ataxia Research Alliance

Grabczyk (PI) 11/01/2009 – 10/31/2010

Transcription-coupled GAA•TTC expansion in human cells.

The long-term objective of this project is to investigate in human cells the role of transcription and DNA repair in progressive expansion of the GAA•TTC repeats that cause Friedreich ataxia.

Louisiana State University School of Medicine Research Enhancement Fund Bridge Grant
Grabczyk (PI) 09/15/2009 – 09/14/2010

This Bridge Grant is to help in obtaining a competitive renewal for R01 NS046567. The long-term objective of the project is to alleviate the frataxin insufficiency that causes Friedreich ataxia.

Completed Research Support

Friedreich's Ataxia Research Alliance
Grabczyk (PI) 06/01/2006 – 05/31/2007
Supplemental Research Grant

This grant helped re-establish Friedreich ataxia research projects that were lost due to Hurricane Katrina.
Role: PI

Friedreich's Ataxia Research Alliance and the Muscular Dystrophy Association
Grabczyk (PI) 7/01/2002-6/30/2005

Comparative analysis of expanded triplet repeat sequences from Friedreich ataxia patients of Acadian and non-Acadian heritage.

This study investigated whether the milder course of the Acadian form of Friedreich ataxia correlates to specific differences found in the sequence of Acadian FRDA repeats.

Role: PI

Friedreich's Ataxia Research Alliance
Grabczyk (PI) 3/15/2001-8/15/2001

A tandem reporter system to test the efficacy of agents that improve transcription through GAA•TTC tracts in human cells.

This grant supported the development of vectors to measure the relative rates of transcription elongation through GAA•TTC repeats in cultured cells. Role: PI
