

## Curriculum Vitae Anatoly Ruvinsky

### Personal data:

Citizenship: Australian, Russian  
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### Education and qualification:

1964-1969 MSc (Biology and Genetics) Novosibirsk State University (NSU), USSR.  
1974 PhD. Institute of Cytology and Genetics (ICG), USSR Academy of Sciences, Novosibirsk.  
1985 Dr. Sc. (Animal Evolutionary Genetics) High Attestation Commission. Moscow. USSR.  
1990 Professor of Genetics, certificate issued by USSR Ministry of Education, Moscow.  
2002 Professor of Genetics, University of New England (UNE), Armidale, Australia.

### Professional experience:

1970-1981 Postgraduate, Researcher, ICG, Novosibirsk, Russia.  
1981-1986 Senior Researcher, ICG, Novosibirsk, Russia.  
1985-1992 Joint Appointment as Professor, Department of Genetics and Cytology, NSU.  
1986-1993 Head of Laboratory of Animal Genetics, ICG, Novosibirsk, Russia.  
1988-1993 Vice - Director of ICG, Novosibirsk, Russia.  
1993-2015 Professor, UNE, Armidale, NSW, Australia.

### Editorial boards:

1991-1996 Mammalian Genome, U.S.A.  
1992-2002 AgBiotech News and Information, UK.  
1995-2015 Editor of series of books on mammalian genetics, CAB International, UK  
2007-2010 The Open Evolution Journal, Internet journal.  
2015- Vavilov Journal of Genetics and Breeding

### Invited symposia and seminars since 1995:

1995 8th International Congress on Isozymes. Invited speaker. Brisbane, Australia.  
1996 Heron Island Workshop on DNA Methylation and Epigenetics. Invited speaker. Australia.  
1998 6<sup>th</sup> World Congress on Genetics Applied to Livestock Production (WVGALP). Invited speaker. Armidale, Australia.  
1998 Joint Meeting of ADSA/ASAS, guest speaker. Denver, Colorado, USA.  
1998 18<sup>th</sup> International Congress on Genetics. Symposium speaker. Beijing, China.  
1999 Human Genome Meeting 1999. Invited speaker. Brisbane, Australia.  
2002 7<sup>th</sup> WCGALP. Invited speaker. Montpellier, France.  
2002 3<sup>rd</sup> Australian Gene Mapping Meeting, invited speaker, Hobart, Australia.  
2004 Invited lecture, Munich Technical University, Germany.  
2004 Invited lecture, the Genome Bioinformatics Laboratory, Barcelona, Spain.  
2008 Keynote speaker, the Sixth International Conference on Bioinformatics of Genome Regulation and Structure, Novosibirsk, Russia  
2010 Invited lecture, Max Plank Institute of Molecular Genetics, Berlin, Germany  
2010 Invited lecture, Institute of Molecular Genetics, Czech Academy of Sciences, Prague.  
2011 Invited lecture, Institute of Evolution, University of Haifa, Israel.  
2013 Invited lecture, University of Toronto, Canada.  
2016 Invited lecture, University of Saint Petersburg, Russia.

### Teaching and supervision:

A. Ruvinsky was involved in undergraduate teaching from 1974, initially at the Novosibirsk State University and then from 1993 to 2010 at UNE. He contributed significantly to curriculum development and teaching of genetics and bioinformatics at UNE. A. Ruvinsky successfully supervised numerous PhD and Master projects.

### Publications:

Total number of publications (1969-2015) exceeds 200, including publications in the leading international journals like *Genetics (USA)*, *The Journal of Heredity (USA)*, *Mammalian Genome (USA)*, *Genetical Research (UK)*, *Heredity (UK)*, *Journal of Molecular Evolution (USA)*, etc. A. Ruvinsky was an editor and author of two

text-books for high schools, which are in continuous publication for 25 years. In 1995-2014 A. Ruvinsky edited and contributed to 9 books on mammalian genetics published by CABI, UK. "Genetics and Randomness" was published in 2009 by CRC Press, Boca Raton, FL, USA.

## List of selected publications:

### 1. Books:

- "The Genetics of Sheep". (1997) Eds L. Piper and **A. Ruvinsky**, CAB International, UK. 608 p. (<http://www.cabi.org/bookshop/book/9780851992006>).
- "The Genetics of the Pig" (1998) Eds M.F. Rothschild and **A. Ruvinsky**, CAB International, UK. 622 p.
- "The Genetics of Cattle" (1999) Eds R. Fries and **A. Ruvinsky**, CAB International, UK. 710 p.
- "The Genetics of the Horse" (2000) Eds A.T. Bowling and **A. Ruvinsky** CAB International, UK. 527 p. ([https://books.google.com.au/books/about/The\\_Genetics\\_of\\_the\\_Horse.html?id=ZL3A097IbjsC](https://books.google.com.au/books/about/The_Genetics_of_the_Horse.html?id=ZL3A097IbjsC)).
- "The Genetics of the Dog" (2001) Eds. **A. Ruvinsky** and J. Sampson, CAB International, UK. 570 p.
- "Mammalian Genomics" (2005) Eds. **A. Ruvinsky** and J. Graves, CAB International, UK. 600 p. (<http://www.cabi.org/bookshop/book/9780851999104>).
- "Genetic and Randomness" (2009) A. Ruvinsky, CRC Press, Taylor & Francis Group, Boca Raton, FL, USA, 160 p. (<http://www.crcpress.com/product/isbn/9781420078855>).
- "The Genetics of the Pig" (2011) 2<sup>nd</sup> Edition. Eds M.F. Rothschild and A. Ruvinsky. CABI, UK. 507 p. (<http://bookshop.cabi.org/?page=2633&pid=2323&site=191>).
- "The Genetics of the Dog" (2012) 2<sup>nd</sup> Edition. Eds E.A. Ostrander and A. Ruvinsky. CABI, UK. 521 p. (<http://www.cabi.org/bookshop/book/9781845939403>).
- "The Genetics of Cattle" (2014) 2<sup>nd</sup> Edition. Eds D.J. Garrick and A. Ruvinsky. CABI, UK. 623 p. (<http://www.cabi.org/bookshop/book/9781780642215>).

### 2. Book Chapters since 1995:

- Ruvinsky, A.** and Rothschild, M.F. (1998) Systematics and phylogeny of pigs. In: *The Genetics of the Pig*. Eds M.F. Rothschild and A. Ruvinsky, CAB International, UK. p. 1-16.
- Ruvinsky, A.** and Spicer, L. (1998) Developmental Genetics. In: *The Genetics of Cattle*. Eds. R Fries and A. Ruvinsky, CAB International, UK. p.437-473.
- A.T. Bowling and **A. Ruvinsky**. (2000) Genetic aspects of domestication, breeds and their origins. In: *The Genetics of the Horse*. Eds A.T. Bowling and A. Ruvinsky, CAB International, UK. p. 25 – 51.
- A. Ruvinsky** and F. Stewart. (2000). Developmental Genetics. In: *The Genetics of the Horse*. Eds A.T. Bowling and A. Ruvinsky, CAB International, UK. p.343 – 385.
- A. Ruvinsky**. (2001) Developmental Genetics. In: *The Genetics of the Dog*. Eds A. Ruvinsky and J. Sampson, CAB International, UK. p. 431 – 459.
- B.J. Hayes, B.P. Kinghorn and **A. Ruvinsky** (2005) Genome scanning for quantitative trait loci. In: *Mammalian Genomics*. Eds. A. Ruvinsky and J.A. Graves. CAB International, UK. p. 507 - 537.
- Rothschild, M.F. and **Ruvinsky, A.** (2007) Chapter 12. Marker-assisted selection for aquatic species. In: *Aquaculture Genome Technologies*. Ed. Z. Liu, Blackwell Publishing, USA. p. 199-213.
- Ruvinsky, A.**, Rothschild, M.F., Larson, G., Gongora, J. (2011) Systematics and evolution of the pig. In: *The Genetics of the Pig*. 2<sup>nd</sup> Edition. Eds M.F. Rothschild and A. Ruvinsky. CABI, UK. p. 1-13.
- Dyck, M. and **Ruvinsky, A.** (2011) Developmental genetics. In: *The Genetics of the Pig*. 2<sup>nd</sup> Edition. Eds M.F. Rothschild and A. Ruvinsky. CABI, UK. p. 263-305.
- Ruvinsky A.** and Hill M. (2012). Developmental genetics. In: *The Genetics of the Dog*. 2<sup>nd</sup> edition Eds E. Ostrander and A. Ruvinsky, CAB International, UK. p. 321-358.
- Ruvinsky, A.** (2014). Molecular genetics of colour variation. In: *The Genetics of Cattle*. 2<sup>nd</sup> edition. Eds D. Garrick and A. Ruvinsky, CAB International, UK. Pp 67-89.
- Ruvinsky, A.** and Teale, A. (2014). Genetics of disease resistance. In: *The Genetics of Cattle*. 2<sup>nd</sup> edition. Eds D. Garrick and A. Ruvinsky, CAB International, UK. Pp 192- 216.
- Ruvinsky A.** (2014). Developmental genetics. In: *The Genetics of Cattle*. 2<sup>nd</sup> edition. Eds D. Garrick and A. Ruvinsky, CAB International, UK. Pp 318-370.

### 3. Selected Refereed Journal Articles:

- Belyaev, D.K., Trut, L.N., and **Ruvinsky, A.O.** (1975) The genetics of W-locus in foxes. *The Journal of Heredity* 66, 331 - 338.
- Ruvinsky, A.O.**, Cellarius, Yu. G., and Cellarius, S.F. (1978) The possible role of genome activity changes in the sex determination of *Daphnia pulex*. *Theoretical and Applied Genetics* 52, 269 - 271.

- Belyaev, D.K., **Ruvinsky, A.O.**, and Trut, L.N. (1981) Inherited activation - inactivation of the star gene in foxes: its bearing on problem of domestication. *Journal of Heredity*, 72, 267 -274.
- Belyaev, D.K., **Ruvinsky, A.O.**, and Borodin, P.M. (1981) Inheritance of alternative states of the *Fused* gene in mice. *Journal of Heredity*, 72, 107 -112.
- Ruvinsky, A.O.**, Lobkov, Y.I. (1981) Esterase genetics in *Daphnia pulex* : Linked inheritance and genotype distribution in natural populations. *Theoretical and Applied Genetics*, 60 , 113 - 117.
- Ruvinsky, A.O.**, Lobkov, Y.I. and Belayev, D.K. (1983) Spontaneous and induced activation of genes affecting the phenotypic expression of glucose 6-phosphate dehydrogenase in *Daphnia pulex*. I. Intracloal variations in the electrophoretic mobility. *Molecular and General Genetics*, 189, 485 - 489.
- Ruvinsky, A.O.**, Lobkov, Y.I. and Belayev, D.K. (1983) Spontaneous and induced activation of genes affecting the phenotypic expression of glucose 6-phosphate dehydrogenase in *Daphnia pulex*. II. Glucose induced changes in electrophoretic mobility. *Molecular and General Genetics*, 189, 490 - 494.
- Belyaev, D.K., **Ruvinsky, A.O.**, Agulnik, A.I., and Agulnik, S.I. (1983) The effect of hydrocortisone on phenotypic expression and inheritance of the *Fused* gene in mice. *Theoretical and Applied Genetics*, 64, 275 - 281.
- Ruvinsky, A.O.**, Lobkov, Y. I. and Belyaev, D.K. (1985) Spontaneous and induced activation of genes affecting the phenotypic expression of glucose 6-phosphate dehydrogenase in *Daphnia pulex*. III. Occurrence frequencies of alternative electrophoretic variants of G6PD in natural populations. *Theoretical and Applied Genetics*, 72, 811 - 815.
- Ruvinsky, A.O.**, Perelygin, A.A., Lobkov, Y.I. and Belyaev, D.K. (1986) Factors organizing and maintaining polymorphism in cyclic parthenogenetic species: *Daphnia pulex*. *Heredity*, 57,15 - 22.
- Ruvinsky, A.O.**, Agulnik, S.I., Agulnik, A.I. and Belyaev, D.K. (1987) The influence of mutations on chromosome 17 upon the segregation of homologues in female mice heterozygous for Robertsonian translocations. *Genetical Research*, 50, 235 - 237.
- Ruvinsky, A.O.**, Agulnik, S.I., Agulnik, A.I. and Belyaev, D.K. (1988) Structural changes of the homologues as a possible cause of abnormal disjunction in female mice heterozygous for Robertsonian translocations. *Genetics, Selection, Evolution*, 20, 299 - 306.
- Ruvinsky, A.O.**, Agulnik, A.I., Protopopov, I.I., Agulnik, S.I. and Belyaev, D.K. (1988) The effect of  $t^{12}$  haplotype on the penetrance and inheritance of the genes *Fused* and *Kinky* in the house mouse (*Mus musculus*). *Journal of Heredity*, 79, 141-146.
- Agulnik, S.I., Agulnik, A.I. **Ruvinsky, A.O.** (1990) Meiotic drive in female mice heterozygous for the HSR inserts on chromosome 1. *Genetical Research* 55, 97-100.
- Agulnik, A.I., Agulnik, S.I., **Ruvinsky, A.O.** (1991) Meiotic drive of *t*-haplotypes: chromosome segregation in mice with tertiary trisomy. *Genetical Research* 57, p. 51-54.
- Ruvinsky, A.O.**, Poliakov, A.V., Agulnik, A.I., Fegueroa, F., Tichi, G., Klein, J. (1991) Low diversity of *t*-haplotypes in the Eastern form of the house mouse. *Genetics* 127, 161-168.
- Ruvinsky, A.O.**, Agulnik, A.I. Agulnik, S.I., Rogacheva, M.B. (1991) Functional analysis of mutations of murine chromosome 17 with the use of tertiary trisomy. *Genetics*, 127, 781-788.
- Ruvinsky, A.O.**, Agulnik, A.I. Agulnik, S.I. (1991) Two doses of paternal *Tme* gene do not compensate the lethality of the *T<sup>hp</sup>* deletion. *Journal of Heredity*, 82, 351-353.
- Borodin, P.M., Gorlov, I.P., Agulnik, A.I., Agulnik, S.I., **Ruvinsky, A.O.** (1991) Chromosome pairing and recombination in mice heterozygous for different translocations in chromosome 16 and 17. *Chromosoma*, 101, 252-258.
- Filippov, V., Fedorova, E., Rogozin, I., Kholodilov, N., **Ruvinsky, A.** (1992) Structure and evolution of *D17Leh80*-like loci in the mouse *t* complex. *Mammalian Genome* 3, 11 - 16.
- Sabantsev, I., Spitsin, O., Agulnik, S., **Ruvinsky, A.** (1993) Population dynamics of aberrant chromosome 1 in mice. *Heredity* 70: 481 - 489.
- Agulnik, S., Sabantsev, I. Orlova, G., **Ruvinsky A.** (1993) Meiotic drive on chromosome 1 is determined by a linked distorter in the mouse. *Genetical Research* 61, 91 -96.
- Agulnik, S., Sabantsev, I., **Ruvinsky, A.** (1993) Effect of sperm genotype on chromatid segregation in female heterozygous for aberrant chromosome 1. *Genetical Research* 61, 97 - 100.
- Redina, O., Zhelezova, A., Golubitza, A., Agulnik, A., and **Ruvinsky, A.** (1994) Phenotypic expression of the *fused* (*Fu*) gene in chimaeric mice. *Genetical Research* 63, 183-187.
- Ruvinsky, A.** (1995) Meiotic drive in female mice: comparative essay. *Mammalian Genome*, 6, 315 - 320.
- Ruvinsky, A.** (1997) Sex, meiosis and multicellularity. *Acta Biotheoretica* 45, 127-141.
- Flood, W.D., Rogozin, I.B. and **Ruvinsky, A.** (1998) A Novel Subfamily of LINE-Derived Elements in Mice. *Mammalian Genome* 9, 881-885.
- Ruvinsky, A.** (1999) Basis of Gametic Imprinting. *Journal of Animal Science* 77, Suppl. 2, 228 - 237.

- Ruvinsky, A.**, Flood, W.D., Zhang, T. and Costantini, F. (2000) Unusual inheritance of the *Axin<sup>Fu</sup>* mutation in mice is associated with widespread rearrangements in the proximal region of Chromosome 17. *Genetical Research* 76, 135-147.
- Ruvinsky, A.**, Flood, W. D. and Costantini, F. (2001) Developmental mosaicism may explain spontaneous reappearance of the *Axin<sup>Fu</sup>* mutation in mice. *Genesis: The Journal of Genetics and Development*. 29, 49 – 54.
- Flood, W. D., **Ruvinsky, A.** (2001) Alternative splicing and expressivity of the *Axin<sup>Fu</sup>* allele in mice. *Heredity* 86, 146-152.
- Eskesen S.T., Eskesen F.N. and **Ruvinsky A.** (2004) Natural selection affects frequencies of AG and GT dinucleotides at the 5' and 3' ends of exons. *Genetics*, 167, 543 - 550.
- Eskesen S.T., Eskesen F.N., Kinghorn B.P. and **Ruvinsky A.** (2004) Periodicity of DNA in exons. *BMC Molecular Biology*, 5:12.
- Ruvinsky, A.**, Eskesen, S.T., Eskesen F.N. and Hurst. L.D. (2005) Can codon usage bias explain intron phase distributions and exon symmetry? *Journal of Molecular Evolution*, 60:1: 99-104.
- Ruvinsky, A.** and Ward, W. (2006) A gradient in the distribution of introns in eukaryotic genes. *Journal of Molecular Evolution* 63: 136 – 141.
- Ruvinsky, A.** and Watson, C. (2007) Intron phase patterns in genes: preservation and evolutionary changes. *The Open Evolution Journal* 1: 1-14.
- Ruvinsky, A.** and Ward, W. (2008) Intron Framing Exonic Nucleotides: A compromise between protein coding and splicing constraints. *The Open Evolution Journal*, 2: 7-12.
- Purushothaman, D., Elliott, R. W. and **Ruvinsky, A.** (2008) A search for transmission ratio distortions in offspring from crosses between inbred mice. *Journal of Genetics*, 87: 127-131.
- Bolormaa, S., **A. Ruvinsky**, S.Walkden-Brown, J. van der Werf (2008) Genetic relationships among Australian and Mongolian fleece-bearing goats. *Asian-Aust. J. Anim. Sci.* Vol. 21 No. 11 : 1535-1543.
- Bolormaa, S., **A. Ruvinsky**, S.Walkden-Brown, J. van derWerf (2008) DNA-based parentage verification in two Australian goat herds. *Small Rumin. Res.* 80 : 95-100.
- Ruvinsky A.** (2009) Intron-exon patterns as a potential tool in studying gene evolution. *VOGiS Herald* 13, 91-95.
- Babenko, V., Ward W. and **Ruvinsky A.** (2010) Does drive toward canonic exonic splicing sites exist in mammals? *Journal of Molecular Evolution* 70: 387-394.
- Ruvinsky, A.** (2012) Why are there difficulties in controlling genetic variability? *International Journal of Epidemiology* 41, 353-354.
- Gunbin, K.V. and **Ruvinsky A.** (2013) Evolution of General Transcription Factors. *Journal of Molecular Evolution* 76:28-47.