

**Andrey A. Ptitsyn,
Ph.D.**

CURRICULUM VITAE

October 2006

DATE OF BIRTH: December 25, 1965
MARITAL STATUS: Married, 2 children
HOME ADDRESS: 16836 Appomattox ave., Baton Rouge, LA 70817

INSTITUTE ADDRESS: Pennington Biomedical Research Center
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CURRENT POSITION: Assistant Professor

EXPERIENCE

Colorado State University

Time: 2006 - current
Position: Assistant Professor
Responsibilities: Development of the Center for Bioinformatics

Pennington Biomedical Research Center

Time: 2001 - 2006
Position: Assistant Professor
Responsibilities: Development of an independent research program in computational biology, assisting the other research program in bioinformatics, assistance in building of bioinformatics facilities at the Center.

Genomics Institute of the Novartis Research Foundation

Time: 2000 - 2001
Position: Bioinformaticist
Responsibilities: Development of algorithms and tools for analysis of genomic data, analysis of microarray data.

South African National Bioinformatics Institute

Time: 1997 - 2000
Position: Senior computer programmer, National Bioinformatics Server Manager.
Responsibilities: Installation and running the national WWW server for bioinformatics support. Development of algorithms and software tools for bioinformatics server. Scientific research in bioinformatics.

**Institute of Cytology and Genetics, Siberian Branch, USSR
Academy of Sciences**

Time: 1996 - 1997

Position: Group Leader and Senior Researcher.

Responsibilities: Leading a small group developing tools for DNA and protein sequence analysis. Design, implementation and management of LAN for the institute. Consulting on LAN and Internet. Determining the needs of the institute in the areas of IT, communications and computing; development of the appropriate solution and overseeing its implementation. Research in computational biology, both independent and in collaboration in experimental teams.

Time: 1993 - 1996

Position: Researcher at the laboratory of Theoretical Molecular Genetics

Responsibilities: Scientific programming and research. Managing independent research and software development projects. Managing local network in the laboratory.

Time: 1992 - 1993

Position: Junior researcher at the laboratory Of Theoretical Molecular Genetics.

Responsibilities: Scientific programming and research it a team. Participation in software projects design.

Time: 1990 - 1992

Position: Scientific Programmer, full time

Responsibilities: Scientific programming and research in a team.

Time: 1988 - 1990

Position: Scientific Programmer, part time.

Responsibilities: Scientific programming in research team

EDUCATION

Ph.D. in Bioinformatics, 2000, University of the Western Cape, Cape Town, South Africa.

Thesis title: "High-performance algorithms for EST clustering".

Master of Science in Biology (special training in **ecology** and **mathematical biology**), 1990, Novosibirsk, Novosibirsk State University, Russia.

Thesis title: "Computer modeling of biomass flow in ecosystems incorporating helminthes with complex life cycle"

Long-range wire connection specialist. 1984 - 1986 Army Signals School, Poltava, Ukraine.

Undergraduate student, 1983 - 1984 Gorky State University, Biological faculty. Russia.

PROFESSIONAL ACTIVITY

2003-current

1997 - Russian Foundation for Basic Research Grant for the development of Siberian Regional Genome Informatics Server (biggest RFBR grant in the institute)

1997 - Visiting researcher at the San Diego Supercomputer Center, San Diego, CA, USA.

1991 - 1997 Scientific work on the All-Union (then Russian National) Scientific and Technological Project "HUMAN GENOME" (Section "Informatics").

1996 - Visiting researcher at the Max Plank Institute for Molecular Genetics, Berlin, Germany.

1993 - 1997 Computer Networking and System Integration in the biological research center, Novosibirsk.

1993, 1994 - Visiting researcher at the Institute for Advanced Biomedical Technologies, Milan, Italy.

1989 - 1993 Development of educational software for The Novosibirsk State University.

PROFESSIONAL ASSOCIATIONS

International Society for Computational Biology - member since 1999

MidSouth Computational BIOlogy Society (MCBIOS) - Board of Directors, since 2003, Chair of the 2005 MCBIOS Bioinformatics Conference

American Diabetes Association - professional section member since 2005.

SUPERVISING EXPERIENCE

Grigorovich Dmitriy, **B.Sci. in Computer Science,** 1996
Novosibirsk State University,
odip@bionet.nsc.ru

Anindya Poddar,
Science Dept. Louisiana State University Computer

Ph.D. candidate

Corby Martin Ph.D. Department of Health Behavior, Instructor
co-mentor on K23 (Mentored Patient-Orientated
Research Career Development Award) grant

entitled *Energy Expenditure: Relation with Body Mass over Time*, awarded by NIH in 2005.

PROGRAMMING LANGUAGES

Assembler (PDP, VAX, Intel x86)
Fortran
Pascal
Java
Perl
HTML/CGI
MPI
C/C++ (preferred)

LANGUAGES SPOKEN

Russian (native)
English (fluent)
Italian (rarely exercised)

PUBLICATIONS

Ptitsyn, A.A., Strelets, V.B., Rogozin, I.B., Kel, A.E., Milanesi L., Kolchanov, N.A. "The AutoGene v1.0: a computer system for automatic molecular genetic analysis", Novosibirsk, 47 pp. 1994;

Strelets, V.B., Ptitsyn, A.A., Milanesi, L., Lim, H.A. (1994) Data bank homology search algorithm with linear computation complexity. *Comp. Appl. Biosci.*, v.10, n. 3 (1994), pp. 319-322;

Ptitsyn, A.A., Grigorovich D.A., Object-oriented data handler for the sequence analysis software development, *Comp. Appl. Biosci.* V.11 no. 6 (1995) pp. 583-589;

A. A. Ptitsyn, I. B. Rogozin, D. A. Grigorovich, V. B. Strelets, A. E. Kel, L. Milanesi, and N. A. Kolchanov, AutoGene: A Computer System for Nucleotide Sequence Analysis, *Molekulyarnaya Biologiya*, v.30 no.2 (1996) pp.436-445;

Gruntenko NE, Kochetov AV, Makarova KS, Mishin VP, Lukasheva VV, Ptitsyn AA, Kokoza VA Gene Nc73EF of *Drosophila melanogaster* encodes a protein highly homologous to E1 subunit of human 2-oxoglutarate dehydrogenase (in Russian) *Genetika* 1998 Jan;34(1):32-7

E.I.Jantsen, A.A.Ptitsyn, M.L.Filipenko, O.A. Baturina, N.P.Mertvetsov, Computer analysis of nucleotide sequences from the family of interspersed repetitive elements MER1 - another

oligonucleotide primer for the PCR assay of human DNA. Genetika. 1997 Feb; 33(2):243-8. (in Russian).

A. Kel, A. Ptitsyn, V. Babenko, S. Meier-Ewert and H. Lehrach, A genetic algorithm for designing gene family-specific oligonucleotide sets used for hybridization: the G protein-coupled receptor protein superfamily, Bioinformatics, v.14 no. 3 (1998) pp. 259-271;

Fedorova EV, Rogozin IB, Ptitsyn AA, Cheriaukene OV, Kaftanovskaia EM The isolation and analysis of the highly repetitive DNA from the argali Tsitol. Genet. 1998 Sep-Oct;32(5):67-74 (in Russian)

Frolov AS, Lavriushev SV, Grigorovich DA, Kel AE, Ptitsyn AA, Kolchanov NA, Podkolodnyi NL, Solov'ev VV, Milanese L, Bourne P, et al. WWWGMS: an integrated server for molecular-genetic studies Biofizika 1999 Sep-Oct; 44(5):832-6 (in Russian)

Miller RT, Christoffels AG, Gopalakrishnan C, Burke J, Ptitsyn AA, Broveak TR, Hide WA A comprehensive approach to clustering of expressed human gene sequence: the sequence tag alignment and consensus knowledge base. Genome Res 1999 Nov;9(11):1143-55

Gamielidien J, Ptitsyn A, Hide W. Eukaryotic genes in Mycobacterium tuberculosis could have a role in pathogenesis and immunomodulation. Trends Genet. 2002 Jan;18(1):5-8.

Smith, S., Ptitsyn, A., Xie, H. Perils, pitfalls and promise: expression profiling to diagnose obesity subtypes. Progress in Obesity Research John Libbey Eurotext Ltd, 2003, pp. 342-347.

Ptitsyn A. Topological adjustments to the Genechip expression values. Methods of Microarray Analysis III. Kluwer Acad. Publishers 2003. ISBN 1-4020-7582-0.

Smith, S., Ptitsyn, A., Graunke, D., Xie, H., Koza, R., Solving Clinical Problems in Nutrition Research with Microarrays Genomics and Proteomics in Nutrition. Marcel Dekker 2004.

Ptitsyn, A. Class Discovery Analysis of the Lung Cancer Gene Expression Data, DNA and Cell Biology, 2004 Oct;23(10):715-21

Jennings, S., Ptitsyn, A., Wilkins, D., Bruhn, R., Slikker, W., Wren, J. Regional Societies: Fostering Competitive Research Through Virtual Infrastructures, PLoS Biology 2004 Dec.2(12):2039-40.

Hide, W., Ptitsyn, A. What is an EST? ENCYCLOPEDIA OF GENETICS, GENOMICS, PROTEOMICS & BIOINFORMATICS 2005 Wiley

Ptitsyn, A. Hide W. CLU: a new algorithm for EST clustering, BMC Bioinformatics. 2005 Jul 15;6 Suppl. 2:S3.

Sanjin Zvonic, Andrey A. Ptitsyn, Steven A. Conrad, L. Keith Scott, Z. Elizabeth Floyd, Gail Kilroy, Xiying Wu, Brian C. Goh, Randall L. Mynatt, Jeffrey M. Gimble Characterization of Peripheral Circadian Clocks in Adipose Tissues. Accepted in "Diabetes", 2006

Andrey A. Ptitsyn, Sanjin Zvonic, Steven A. Conrad, L. Keith Scott, Randall L. Mynatt, and Jeffrey M. Gimble Circadian Clocks are Resounding in Peripheral Tissues. PLoS Comput Biol. 2(3): e16.

Andrey A. Ptitsyn, Sanjin Zvonic, Jeffrey M. Gimble Permutation test for periodicity in short time series data BMC Bioinformatics 2006, 7(Suppl 2):S10

Jonathan D Wren, Yuriy Gusev, Andrey Ptitsyn and Stephen Winters-Hilt Proceedings of the Third Annual Conference of the MidSouth Computational Biology and Bioinformatics Society BMC Bioinformatics 2006, 7(Suppl 2):S1

Adrian M. Stütz, Jaroslaw Staszkiwicz, Andrey Ptitsyn, George Argyropoulos Circadian expression of genes regulating food intake Accepted in Obesity 2006

Sanjin Zvonic, Andrey A Ptitsyn, Gail Kilroy, Xiying Wu, Steven A Conrad, L. K Scott, Farshid Guilak, Gadi Pelled, Dan Gazit, Jeffrey M. Gimble, Circadian Oscillation of Gene Expression in Murine Calvarial Bone; Accepted in Journal of Bone and Mineral Research (JBMR MS# J0607471R1)

SCIENTIFIC CONFERENCES

1990 - International Symposium "Modelling and Computer Methods in Molecular Biology and Genetics", Novosibirsk, - 2 posters.

1993 - I International course of computer methods in molecular genetics, IMB, Moscow, practical workshops.

1994 - IV annual conference of Russian National Program "Human Genome", Chernogolovka (Moscow region), poster.

1995 - II International course of computer methods in molecular genetics, IMB, Moscow, practical workshops.

1996 - ISMB-96, poster

1996 - II Siberian Congress on Applied and Industrial Mathematics - 4 oral presentations.

1996 - German Conference on Bioinformatics, Leipzig - poster
1996 - Bioinformatics-Structure, Jerusalem - posters
1999 - EBG meeting, University of Cape Town, oral presentation.
1999 - RECOMB99, Lyon, poster
1999 - ISMB99, Heidelberg, tutorial (one of the authors), poster
2000 - CSHL Genome sequencing and biology, poster
2000 - EBI Genome Based Gene Structure Determination, Poster
2000 - ISMB2000, San Diego, poster
2001 - RECOMB01 Satellite Meeting on sequence assembly, oral presentation.
2001 - ISMB2001, Copenhagen, poster.
2002 - ISMB2002, Edmonton, poster.
2002 - Microarray Analysis Coordination Network Retreat, Lake Mohonk NY, oral presentation.
2002 - Critical Assessment of Microarray Data Analysis, Duke Univ., oral presentation.
2003 - ISMB2003, Brisbane, Australia, poster.
2003 - Open Bioinformatics Consortium BOSC2003, Brisbane, Australia, oral presentation.
2003 - Affymetrix Low-Level Analysis Workshop, UC Berkeley, oral presentation.
2003 - MCBIOS (Mid-South Bioinformatics Society) First Annual Meeting, Little Rock, Arkansas, oral presentation.
2004 - Bioinformatics Symposium, University of Louisiana at Lafayette, oral presentation
2004 - MCBIOS (Mid-South Bioinformatics Society) First Annual Meeting, Little Rock, Arkansas, oral presentation.
2005 - Keystone Symposium X3 Systems Biology "Mechanisms of insulin resistance revealed by high-dimension expression pattern analysis".
2005 - Bioinformatics Symposium at UL Lafayette, LA "High-performance "booster" matching algorithm for EST clustering".
2005 - American Diabetes Association, San Diego, CA "New mechanisms of insulin resistance in skeletal muscle".
2005 - 2nd Moscow Conference on Computational Molecular Biology (MCCMB'05) «Algorithm GRAD for selection of informative genetic characteristics»
2006 - MCBIOS 3rd Annual Meeting (Chair), poster.
2006 - CSHL Systems Biology, poster
2006 - BGRS2006, poster

AREA OF SCIENTIFIC INTERESTS:

Algorithm development. High-performance computation. Sequences analysis. Large-scale datamining. Genome assembly and annotation. EST clustering. Expression analysis, microarray data analysis. Circadian oscillation in biological pathways. Etiology of complex metabolic disorders (diabetes, obesity). Cluster analysis of

biological data. Gene structure and regulation, genome organization. Networking and Internet technologies in biological research.