

BIOGRAPHICAL SKETCH

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NAME	Jaroslaw (Jarek) Meller		
eRA COMMONS USER NAME	jmeller		
POSITION TITLE		Associate Professor	
EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
Nicholas Copernicus University, Torun, Poland	M.Sc.	1985-1991	Physics
Nicholas Copernicus University, Torun, Poland	M.Sc.	1988-1993	Math./Computer Science
Paul Sabatier University, Toulouse, France	-	1994/95	Computational Chemistry
Nicholas Copernicus University, Torun, Poland	Ph.D.	1991-1996	Computational Chemistry
IBIB, Polish Academy of Sciences, Warsaw, Poland	Doctorate	2004	Biomedical Engineering

A. Positions and Honors.*Postdoctoral positions:*

- 1996-1997 Postdoctoral fellow, **Hebrew University**, Jerusalem, Israel.
Research subjects: *computational biology*, computer simulations of proteins, Molecular Dynamics, protein folding.
- 1997-1998 Japan Society for the Promotion of Science fellow, **Kyoto University**, Japan.
Research subjects: *computational chemistry*, ab initio studies on electronic structure of biomolecules, modeling of dispersion interactions in chromatography.
- 1999-2001 Research fellow, **Cornell University**, Ithaca, USA.
Research subjects: *bioinformatics*, structural genomics, gene annotation, protein recognition.

Academic appointments:

- 1995-1998 Teaching Assistant, Nicholas Copernicus University, Torun, Poland
- 1998-present Assistant Professor, Dept. of Informatics, Nicholas Copernicus University, Torun, Poland
- 2001-2005 Assistant Professor, Division of Biomedical Informatics, Children's Hospital Research Foundation, Cincinnati, Ohio
- 2004-2006 Assistant Professor (secondary appointment), Department of Biomedical Engineering, University of Cincinnati, Cincinnati, Ohio
- 2005-2006 Associate Professor, Division of Biomedical Informatics, Children's Hospital Research Foundation, Cincinnati, Ohio
- 2006-present Associate Professor, Department of Environmental Health, University of Cincinnati Medical College, Cincinnati, Ohio, USA
- 2006-present Associate Professor (secondary appointment), Department of Biomedical Engineering, University of Cincinnati, Ohio, USA
- 2006-present Associate Professor (tertiary appointment), Division of Biomedical Informatics, Children's Hospital Research Foundation, Cincinnati, Ohio, USA

Awards and Other Professional Activities:

- 1993 European Union TEMPUS Program fellowship
- 1994 European Union TEMPUS Program fellowship
- 1995 Polish-French Scientific Collaboration Program fellowship
- 1997 Visiting scientist, IRSAMC, Paul Sabatier University, Toulouse, France
- 1997 Japan Society for the Promotion of Science fellowship
- 1999 Visiting scientist, Center for Advanced Studies, Hebrew University, Jerusalem, Israel
- 2001 Co-organizer of a mini-symposium, Tenth SIAM Conference on Parallel Processing for Scientific Computing, Portsmouth, VA

- 2001-present Member, American Association for the Advancement of Science
- 2003 Co-organizer of a bioinformatics workshop, Genes, Proteins, Interactions and Expressions, Bioinformatics Research Center, Nanyang Technological University, Singapore
- 2003 Co-organizer of a bioinformatics workshop, BIT 2003, Nicholas Copernicus University, Torun, Poland
- 2004-present Member, International Society for Computational Biology
- 2004 Co-organizer and leader of a bioinformatics session, Life Sciences Without Boundaries, OVALS 2004, University of Louisville, KY
- 2004 Co-organizer of a bioinformatics workshop, BIT 2004, Nicholas Copernicus University, Torun, Poland
- 2005 Organizer of a computational biology mini-symposium, Joint Annual Meeting of the Interface and the Classification Society of North America, *Interfaces 2005*, Washington University, Saint Lois
- 2005 Organizer of a bioinformatics workshop, *Computational Studies of Protein-Protein Interactions*, University of Cincinnati
- 2005 Co-organizer of a satellite *Workshop on Applications of Statistical and Machine Learning in Bioinformatics*, ICANN 2005, Warsaw, Poland

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

- J. Meller, J.P. Malrieu and R. Caballol; *State-specific Coupled Cluster type dressing of Multireference Singles and Doubles Configuration Interaction matrix*, **Journal of Chemical Physics**, 104, 4068 (1996)
- L. Adamowicz, R. Caballol, J.P. Malrieu and J. Meller; *A general bridge between CI and CC methods: a multistate solution*, **Chemical Physics Letters**, 259, 619 (1996)
- J. Meller and R. Elber; *Computer Simulations of Carbon Monoxide Photodissociation in Myoglobin: Structural Interpretation of the B states*, **Biophysical Journal**, 74, 789-802 (1998)
- M. Turowski, N. Yamakawa, J. Meller, K. Kimata, T. Ikegami, K. Hosoya and N. Tanaka; *Deuterium isotope effect in chromatography as examined by various HPLC systems. Comments on the retention and H/D differentiation mechanism*, **Chromatography**, 19 (1998)
- R. Elber, J. Meller and R. Olender; *Stochastic Path Approach to Compute Atomically Detailed Trajectories: Application to the Folding of C Peptide*, **Journal of Physical Chemistry B**, 103, 899-911 (1999)
- J. Meller and W. Duch; *SGA derivation of matrix elements between spin-adapted perturbative wavefunctions*, **International Journal of Quantum Chemistry**, 74, 123-133 (1999)
- A. Frary, T. C. Nesbitt, A. Frary, S. Grandillo, E. van der Knaap, B. Cong, J. Liu, J. Meller, R. Elber, K. B. Alpert, S. D. Tanksley; *fw2.2: A Quantitative Trait Locus Key to the Evolution of Tomato Fruit Size*, **Science**, 289: 85-88 (2000)
- Wan J, Meller J, Hada M, Ehara M, Nakatsuji H; *Electronic excitation spectra of furan and pyrrole: Revisited by the symmetry adapted cluster-configuration interaction method*, **Journal of Chemical Physics**, 113: 7853-7866 (2000)
- J. Meller, R. Elber; *Linear Optimization and a Double Statistical Filter for Protein Threading Protocols*, **Proteins: Structure, Function and Genetics**, 45: 241-261 (2001)
- J. Meller, R. Elber; *Protein Recognition by Sequence-to-Structure Fitness: Bridging Efficiency and Capacity of Threading Models*, in *Computational Methods for Protein Folding: A Special Volume of Advances in Chemical Physics*, ed. R. A. Friesner, John Wiley & Sons 2002
- J. Meller, M. Wagner, R. Elber; *Maximum Feasibility Guideline to the Design and Analysis of Protein Folding Potentials*, **Journal of Computational Chemistry**, 23: 111-118 (2002)
- A. V. Kuznetsova, J. Meller, P. O. Schnell, J. A. Nash, Y. Sanchez, J. W. Conaway, R. C. Conaway and M. F. Czyzyk-Krzeska; *VHL binds hyperphosphorylated large subunit of RNA Polymerase II through a proline hydroxylation motif and targets it for ubiquitination*, **PNAS** vol. 100 (5), 2706-2711 (2003)
- J. Meller, J. P. Malrieu and J. L. Heully; *Size-consistent multireference CI through the dressing of the norm of determinants*, **Molecular Physics**, vol. 101 (13), 2029-2041 (2003)

- M. Turowski, N. Yamakawa, **J. Meller**, K. Kimata, T. Ikegami, K. Hosoya, N. Tanaka and E.R. Thornton; *Deuterium Isotope Effects on Hydrophobic Interactions. The Importance of Dispersion Interactions in the Hydrophobic Phase*, **Journal of American Chemical Society**, 125: 13836-13849 (2003)
- M. Tan, P. Huang, **J. Meller**, W. Zhong, T. Farkas and X. Jiang; *Mutations within P2 Domain of Norovirus Capsid Affect Binding to Human Histo-Blood Group Antigens: Evidence for a Binding Pocket*, **Journal of Virology**, 77 (23): 12562-71 (2003)
- M. Wagner, **J. Meller** and R. Elber; *Large-Scale Linear Programming Techniques for the Design of Protein Folding Potentials*, **Mathematical Programming**, vol. 101 (2): 301-318 (2004)
- M. F. Czyzyk-Krzeska and **J. Meller**; *Von Hippel-Lindau Tumor Suppressor: Not Only HIF's Executioner*, **Trends in Molecular Medicine**, vol. 10 (4), 146-149 (2004)
- R. Adamczak, A. Porollo and **J. Meller**; *Accurate Prediction of Solvent Accessibility Using Neural Networks Based Regression*, **Proteins: Structure, Function and Bioinformatics**, 56(4):753-67 (2004)
- R. Adamczak and **J. Meller**; *On the Transferability of Folding and Threading Potentials and Sequence-Independent Filters for Protein Folding Simulations*, **Molecular Physics**, vol. 102 (11-12): 1291-1305 (2004)
- M.-D. Filippi, C. E. Harris, **J. Meller**, Y. Zheng and D. A. Williams; *Localization of Rac2 Specifies Superoxide Generation, Actin Polarity and Chemotaxis in Neutrophils*, **Nature Immunology** 5, 744 - 751 (2004)
- A. Porollo, R. Adamczak and **J. Meller**; *Polyview: A Flexible Visualization Tool for Structural and Functional Annotations of Proteins*, **Bioinformatics**, vol. 20 (15): 2460-62 (2004)
- R. Adamczak, A. Porollo and **J. Meller**; *Combining Prediction of Secondary Structures and Solvent Accessibility in Proteins*, **Proteins: Structure, Function and Bioinformatics**, 59(3): 467-75 (2005)
- M. Wagner, R. Adamczak, A. Porollo and **J. Meller**; *Linear Regression Models for Solvent Accessibility Prediction in Proteins*, **Journal of Computational Biology**, Vol. 12 (3): 355-369 (2005)
- C. E. Petre-Draviam, E. B. Williams, C. J. Burd, A. Gladden, H. Moghadam, **J. Meller**, J. A. Diehl, and K. E. Knudsen; *A Central Domain of Cyclin D1 Mediates Nuclear Receptor Co-repressor Activity*, **Oncogene**, 24(3): 431-44 (2005)
- V. V. Ivanenko, **J. Meller**, and T. L. Kirley; *Characterization of disulfide bonds in human nucleoside triphosphate diphosphohydrolase 3 (NTPDase3): implications for NTPDase structural modeling*, **Biochemistry**, 44(25):8998-9012 (2005)
- B. Cao, A. Porollo, R. Adamczak, M. Jarrell and **J. Meller**; *Enhanced Recognition of Protein Transmembrane Domains with Prediction-based Structural Profiles*, **Bioinformatics**, vol. 22 (3): 303-309 (2006)
- W. Duch, K. Swaminathan and **J. Meller**; *Artificial Intelligence Approaches for Rational Drug Design and Discovery*, **Pharmaceutical Design**, to appear (2006)
- M. Tan, **J. Meller** and X. Jiang; *The C-Terminal Arginine Cluster Is Essential for Receptor-Binding of Norovirus*, **Journal of Virology**, 80 (15): 7322-31 (2006)
- B. E. Slaven, A. Porollo, T. Sesterhenn, A. G. Smulian, M. T. Cushion and **J. Meller**; *Large-Scale Characterization of Introns in the Pneumocystis carinii Genome*, **Journal of Eukaryotic Microbiology**, to appear (2006)
- B. E. Slaven, **J. Meller**, A. Porollo, T. Sesterhenn, A. G. Smulian, and M. T. Cushion; *Draft Assembly and Annotation of the Pneumocystis carinii Genome*, **Journal of Eukaryotic Microbiology**, to appear (2006)
- B. Cao, M. Medvedovic, and **J. Meller**; *Prediction of Transmembrane Domains and Pore-facing Residues in Beta-barrel Membrane Proteins*, in Applications of Statistical and Machine Learning in Bioinformatics: a volume in the series **Advances in Computational and Systems Biology**, eds. J. Meller and W. Nowak, Peter Lang GmbH, to appear (2006)

A. Porollo and **J. Meller**; *Prediction-based Fingerprints of Protein Interactions*, **Proteins: Structure, Function and Bioinformatics**, to appear (2006)

J. Meller, R. Adamczak, M. P. Scola, M. Barnes, S. D. Thompson, M. H. Passo, H. I. Brunner, D. N. Glass, and A. A. Grom; *Machine Learning Analysis of Expression Profiles of Synovial Tissue Cytokines Helps Identify Patients with Systemic Onset Juvenile Rheumatoid Arthritis*, in **Applications of Statistical and Machine Learning in Bioinformatics**: a volume in the series Advances in Computational and Systems Biology, eds. J. Meller and W. Nowak, Peter Lang, to appear (2006)

C. Research Support

“Gene Identification and Functional Annotations for the Pneumocystis Genome”

Principal Investigator: Jarek Meller

Agency: National Institutes of Health; Period: 2003-2006.

“Large-scale Integrated Analysis of Genomic Landscapes in JRA”

Principal Investigator: Sue Thompson, Co-PI: Jarek Meller

Agency: National Institutes of Health; Period: 2003-2007.

“Optimization of Folding and Threading Potentials”

Principal Investigator: Ron Elber, Co-PI: Jarek Meller

Agency: National Institutes of Health; Period: 2004-2008.

“Computational Medicine Center”

Principal Investigator: Thomas F. Boat; co-I: Jarek Meller

Agency: Ohio BRTT Partnership Award; Period: 2004-2007.

“Cincinnati DDRDC: Center for Growth and Development (CGD)”

Principal Investigator: Mitchell B. Cohen; co-I: Jarek Meller

Agency: National Institutes of Health; Period: 2003-2008.

“Norwalk-like Viruses and Their Receptors”

Principal Investigator: Jason Jiang; co-PI: Jarek Meller

Agency: National Institutes of Health; Period: 2005-2010.

D. Expertise summary

Bioinformatics, computational biology, computational chemistry, machine learning, pattern recognition, large-scale classification and regression problems in genomics, computer simulations of macromolecules, protein structure and function prediction, fold recognition, folding simulations, design of folding potentials, solvent accessibility prediction, protein-protein and protein-membrane interactions, prediction of post-translational modifications, genome annotation, gene finding, identification of predictive fingerprints of disease states and other phenotypes.