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for Biological Physics Prize Fund:**
(until sufficient funds or endowments have been raised)

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Division of Biological Physics Nominating Committee

Chair:

Denis Rousseau
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term ends March 2006

Council-Appointee:

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term ends March 2006

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term ends March 2007

Ralf Bundschuh,
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term ends March 2007

Wouter-Jan Rappel
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term ends March 2006

PRE HIGHLIGHTS

Biological Physics articles from
Physical Review E
(Statistical, Nonlinear, and Soft
Matter Physics)

April 2005

**Volume 71, Number 4, Articles
(04xxxx)**

<http://scitation.aip.org/dbt/dbt.jsp?KEY=PLEEE8&Volume=71&Issue=4>

ARTICLES

**Electrical conduction in
macroscopically oriented
deoxyribonucleic and hyaluronic acid
samples**

[Zdravko Kutnjak](#), [Gojmir Lahajnar](#), [Cene Filipič](#), [Rudolf Podgornik](#), [Lars Nordenskiöld](#), [Nikolay Korolev](#), and [Allan Rupprecht](#)

Published 4 April 2005 (*8 pages*)
041901

**Modeling the effects of anesthesia on
the electroencephalogram**

[I. Bojak](#) and [D. T. J. Liley](#)

Published 4 April 2005 (*22 pages*)
041902

**Using cell potential energy to model
the dynamics of adhesive biological
cells**

[Stephen Turner](#)

Published 7 April 2005 (*12 pages*)
041903

**Anomalous swelling of lipid bilayer
stacks is caused by softening of the
bending modulus**

[Nanjun Chu](#), [Norbert Kučerka](#), [Yufeng Liu](#),
[Stephanie Tristram-Nagle](#), and [John F. Nagle](#)

Published 7 April 2005 (*8 pages*)
041904

**Cluster formation by allelomimesis in
real-world complex adaptive systems**

[Dranreb Earl Juanico](#), [Christopher Monterola](#), and [Caesar Saloma](#)

Published 11 April 2005 (*8 pages*)
041905

**Dynamics of molecular motors with
finite processivity on heterogeneous
tracks**

[Yariv Kafri](#), [David K. Lubensky](#), and [David R. Nelson](#)

Published 12 April 2005 (*14 pages*)
041906

**Thermal Casimir effect in lipid bilayer
tubules**

[D. S. Dean](#) and [R. R. Horgan](#)

Published 15 April 2005 (*4 pages*)
041907

**Predicting shapes of polymer-chain-
anchored fluid vesicles**

[Jiafang Wang](#), [Kunkun Guo](#), [Feng Qiu](#),
[Hongdong Zhang](#), and [Yuliang Yang](#)

Published 18 April 2005 (*5 pages*)
041908

**Local cooperativity mechanism in the
DNA melting transition**

[Vassili Ivanov](#), [Dmitri Piontkovski](#), and
[Giovanni Zocchi](#)

Published 20 April 2005 (*8 pages*)
041909

**Universal $1/f$ noise, crossovers of
scaling exponents, and chromosome-
specific patterns of guanine-cytosine
content in DNA sequences of the
human genome**

[Wentian Li](#) and [Dirk Holste](#)

Published 20 April 2005 (*9 pages*)
041910

**Spectral analysis of protein-protein
interactions in *Drosophila*
*melanogaster***

[Christel Kamp](#) and [Kim Christensen](#)
Published 21 April 2005 (*8 pages*)
041911

Spatial distribution of protein molecules adsorbed at a polyelectrolyte multilayer

[Guido Jackler](#), [Claus Czeslik](#), [Roland Steitz](#), and [Catherine A. Royer](#)
Published 27 April 2005 (*7 pages*)
041912

Probing single DNA mobility with fluorescence correlation microscopy

[Svetlana A. Tatarikova](#) and [David A. Berk](#)
Published 27 April 2005 (*5 pages*)
041913

Evolutionary dynamics of adult stem cells: Comparison of random and immortal-strand segregation mechanisms

[Emmanuel Tannenbaum](#), [James L. Sherley](#), and [Eugene I. Shakhnovich](#)
Published 27 April 2005 (*9 pages*)
041914

Stochastic modeling of protein motions within cell membranes

[Sharon Khan](#), [Andy M. Reynolds](#), [Ian E. G. Morrison](#), and [Richard J. Cherry](#)
Published 29 April 2005 (*7 pages*)
041915

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<http://scitation.aip.org/dbt/dbt.jsp?KEY=PLLEE8&Volume=71&Issue=5>

RAPID COMMUNICATIONS

Pattern formation of microtubules and motors: Inelastic interaction of polar rods

[Igor S. Aranson](#) and [Lev S. Tsimring](#)
Published 10 May 2005 (*4 pages*)
050901(R)

ARTICLES

Nonexponential relaxation and hierarchically constrained dynamics

in a protein

[Elihu Abrahams](#)
Published 5 May 2005 (*4 pages*)
051901

Mesoscopic modeling for nucleic acid chain dynamics

[M. Sales-Pardo](#), [R. Guimerà](#), [A. A. Moreira](#), [J. Widom](#), and [L. A. N. Amaral](#)
Published 5 May 2005 (*13 pages*)
051902

Translocation of double-strand DNA through a silicon oxide nanopore

[A. J. Storm](#), [J. H. Chen](#), [H. W. Zandbergen](#), and [C. Dekker](#)
Published 6 May 2005 (*10 pages*)
051903

Noise-induced transition from translational to rotational motion of swarms

[Udo Erdmann](#), [Werner Ebeling](#), and [Alexander S. Mikhailov](#)
Published 6 May 2005 (*7 pages*)
051904

Effects of kinks on DNA elasticity

[Yuri O. Popov](#) and [Alexei V. Tkachenko](#)
Published 10 May 2005 (*8 pages*)
051905

Nonequilibrium patterns and shape fluctuations in reactive membranes

[Ramon Reigada](#), [Javier Buceta](#), and [Katja Lindenberg](#)
Published 18 May 2005 (*11 pages*)
051906

Stochastic discrete event simulation of germinal center reactions

[Marc Thilo Figge](#)
Published 24 May 2005 (*15 pages*)
051907

Leading-edge vortex stability in insect wings

[F. O. Minotti](#) and [E. Speranza](#)
Published 25 May 2005 (*6 pages*)
051908

Multiple weak hits confuse complex systems: A transcriptional regulatory

network as an example

[Vilmos Ágoston](#), [Péter Csermely](#), and [Sándor Pongor](#)

Published 26 May 2005 (7 pages)
051909

Multicellular tumor spheroid in an off-lattice Voronoi-Delaunay cell model

[Gernot Schaller](#) and [Michael Meyer-Hermann](#)

Published 27 May 2005 (16 pages)
051910

Dynamics of conduction blocks in a model of paced cardiac tissue

[Hervé Henry](#) and [Wouter-Jan Rappel](#)

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051911

Hydrodynamic stability of helical growth at low Reynolds number

[Ariel Balter](#) and [Jay X. Tang](#)

Published 31 May 2005 (8 pages)
051912

BRIEF REPORTS

Elimination of spiral chaos by pulse entrainment in the Aliev-Panfilov model

[Hidetsugu Sakaguchi](#) and [Yusuke Kido](#)

Published 19 May 2005 (4 pages)
052901

Periodicity of mass extinctions without an extraterrestrial cause

[Adam Lipowski](#)

Published 20 May 2005 (4 pages)
052902

**POSTDOCTORAL RESEARCH ASSOCIATE
CENTER FOR NEURODYNAMICS
UNIVERSITY OF MISSOURI AT ST LOUIS**

A postdoctoral position in experimental & computational neurophysiology is available in the Center for Neurodynamics at the University of Missouri at St Louis. Research will involve *in vivo* imaging of neocortical seizures in the rat, using various imaging methods (intrinsic optical signal, calcium dye imaging, voltage sensitive dye imaging), as well as analysis of patterns of seizure spread using nonlinear-dynamics-based techniques. Research may also include computational studies of synchronization in neural systems. We are seeking a highly-motivated scientist with expertise in at least two of the following areas: (1) experimental neuroscience and brain imaging, (2) experimental electrophysiology, (3) nonlinear dynamics in biological systems. A PhD in Physics, Neuroscience, or related field is required. Salary will be competitive and commensurate with experience. Applications, including curriculum vitae, description of research interests, PDF files of representative publications, and the names of three references, should be sent by e-mail to Dr. Sonya Bahar, bahars@umsl.edu. *The University of Missouri-St. Louis is an Affirmative Action, Equal Opportunity employer committed to excellence through diversity.*