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Scope of Journal

The Journal of Neurophysiology has been a leading source of original research for neurophysiologists around the world. This respected journal, whose articles have an average cited half-life of over 7.5 years, is also a fundamental reference for any neurophysiologist.

The journal boasts approximately 750 articles per year, reporting on the function of the nervous system at all levels, from the membrane and cell to systems and behavior.

The journal presents new experimental approaches, including developmental neurobiology, neurochemistry, imaging and mapping techniques, and behavioral analysis.

Authors are required to submit papers online at www.apscentral.org.

A Few HOT Articles

The size principle: a rule describing the recruitment of motoneurons
Lorne M. Mendell

Plasticity in the Mediodorsal Thalamo-Prefrontal Cortical Transmission in Behaving Mice
Cyril Herry, Rose-Marie Vouimba, René Garcia
J. Neurophysiol. Nov 01, 1999; 82: 2827-2832

Dynamics of Receptive Field Size in Primary Visual Cortex
Brian J. Malone, Vikas R. Kumar, Dario L. Ringach

Predictive Reward Signal of Dopamine Neurons
Wolfram Schultz

Computational Motor Control: Redundancy and Invariance
Emmanuel Guigon, Pierre Baraduc, Michel Desmurget

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Neurophysiologist Research Faculty Position

Position: Full time research faculty position in the Frank Reidy Research Center for Bioelectrics of Old Dominion University. The Bioelectrics Center brings together physicists, electrical engineers, biologists and physicians to work together to explore the effects of nanosecond pulsed electric fields on cell function both in vitro and in vivo. We seek an experienced neurophysiologist to study the effects of ultrashort pulsed electric fields on neural transmission.

Qualifications: Applicants should have a record of productivity in research on the mammalian CNS. Cellular electrophysiology experience including the use and interpretation of the patch clamp technique is required. Experience studying the evoked neuromuscular response following stimulation of the rat cerebral cortex is also desirable. Candidates must have a Ph.D. degree.

To apply for this position, submit a letter of application, vita, and names, mailing addresses, email addresses and phone numbers of three professional references to: The Frank Reidy Research Center for Bioelectrics, 830 Southampton Ave., Suite 5100, Norfolk, VA 23510. Screening of applications will begin immediately and continue until a suitable candidate is hired.

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In a pioneering international initiative, Weill Medical College of Cornell University established the Weill Cornell Medical College in Qatar (WCMC-Q) with the sponsorship of the Qatar Foundation for Education, Science and Community Development. WCMC-Q is located in Doha, Qatar, and in its fifth year of operation, Weill Cornell seeks candidates for faculty positions to teach in Doha in:

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Further details regarding the WCMC-Q program and facilities can be accessed at: [www.qatar-med.cornell.edu](http://www.qatar-med.cornell.edu).

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Abbreviations

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ACH  acetylcholine
ACCH  adrenocorticotropic hormone
ADP (CDP, GDP, UDP)  adenosine 5'-diphosphate (and similarly for cytidine, guanosine, uridine, xanthosine, thymidine)
AMP, etc.  adenosine 5'-monophosphate, etc.
ANG I, etc.  angiotensin I, etc.
ANOVA  analysis of variance
ATP, etc.  adenosine 5'-triphosphate, etc.
ATPase, etc.  adenosine 5'-triphosphatase, etc.
AVP  arginine vasopressin
BAPTA  1,2-bis(2-aminophenoxy)ethane-N,N,N',N'-tetraacetic acid
BCECF  2',7-bis(2-carboxyethyl)-5(6)-carboxyfluorescein
bp  base pair(s)
BSA  bovine serum albumin
CaM  calmodulin
CaMK  Ca2+/-calmodulin-dependent kinase
CaMKK  CaMK kinase
cAMP, etc.  adenosine 3',5'-cyclic monophosphate, etc.
CCCP  carbonyl cyanide m-chlorophenylhydrazone
CCK  cholecystokinin
cDNA  complementary DNA
CFTR  cystic fibrosis transmembrane conductance regulator
CGRP  calcitonin gene-related peptide
cDNA  complementary DNA
cDNA  complementary DNA
cDNA  complementary DNA
cDNA  complementary DNA
CFTR  cystic fibrosis transmembrane conductance regulator
CGRP  calcitonin gene-related peptide
C source  concentration giving half-maximal response
electrocardiogram
ECM  extracellular matrix
EDTA  ethylenediaminetetraacetic acid
EEG  electroencephalogram
eGF  epidermal growth factor
EGTA  ethylene glycol-bis(2-aminoethyl ether)-N,N',N'-tetraacetic acid
ELISA  enzyme-linked immunosorbent assay
EMS  electrophoretic mobility shift assay
ERK  extracellular signal-regulated kinase
FAD  flavin adenine dinucleotide
FADH2  reduced flavin adenine dinucleotide
FBS, FCS  fetal bovine/calf serum
FCCP  carbonyl cyanide p-trifluoromethoxyphenylhydrazone
FGF  fibroblast growth factor
FITC  fluorescein isothiocyanate
FISH  follicle-stimulating hormone
GABA  y-aminobutyric acid (also, "GABAergic")
GAP  growth-associated protein
GAPDH  glyceraldehyde-3-phosphate dehydrogenase
GC-MS  gas chromatography-mass spectrometry
GDPS  guanosine 5'-O-(2-thiodiphosphate)
GSH, GSSG  reduced and oxidized glutathione
GTPyS  guanosine 5'-O-(3-thiotriphosphate)
GSK  glycogen synthase kinase
Hb  hemoglobin
HBSS  Hanks' balanced salt solution
Hct  hematocrit
HDL  high-density lipoprotein
HPEPS  N-2-hydroxyethylpiperazine-N'-2-ethanesulfonic acid
HETE  hydroxyeicosatetraenoic acid
HPLC  high-performance liquid chromatography
5-HT  5-hydroxytryptamine (serotonin)
IBMX  3-isobutyl-1-methylxanthine
ICAM  intercellular adhesion molecule
IFN  interferon
IGF-I, II  insulin-like growth factor I and II
IGF, etc.  insulin growth factor, etc.
IKK  IKB kinase
IL-1  interleukin-1 (IL-2, etc.)
JO  isotope ratio mass spectrometry
JAK  Janus-activated kinase
JNK  JNK kinase
Km  equilibrium constant related to Michaelis-Menten kinetics (similarly, 
  Km, Km, Km, Km, Km, Km)
Kb  kilobase(s)
LDL  low-density lipoprotein
LH  luteinizing hormone
LH-RH  luteinizing hormone-releasing hormone
LPS  lipopolysaccharide
Mab  monoclonal antibody
MAPK  mitogen-activated protein kinase
MAPK  MAP kinase (also known as MEK or MKK)
MAPKAPK  MAP kinase activated protein kinase
MEM  Eagle’s minimum essential medium
MES  2-(N-morpholino)ethanesulfonic acid
MKP  MAP kinase phosphatase
MOPS  3-(N-morpholino)propanesulfonic acid
MPO  myeloperoxidase
M, m  relative molecular mass (unitless)
MRI  magnetic resonance imaging
MSH  melanocyte-stimulating hormone
NAD  nicotinamide adenine dinucleotide
NADH  reduced nicotinamide adenine dinucleotide
NADPH  nicotinamide adenine dinucleotide phosphate
NF-κB  nuclear factor-κB
NGF  nerve growth factor
nM  nuclear magnetic resonance
NOS  nitric oxide synthase
PAGE  polyacrylamide gel electrophoresis
PAH  p-aminophenol
PBS  phosphate-buffered saline
PCNA  proliferating cell nuclear antigen
PCR  polymerase chain reaction
PDGF  platelet-derived growth factor
PET  positron emission tomography
PG  prostaglandin (PGE1, PG E2, PGF2)
PGE 6 6-p-guanosinetriphosphate
PGF  inorganic phosphate
PI  inorganic phosphate
P I  inorganic phosphate
PIPIES  piperazine-N,N'-bis(2-ethanesulfonic acid)
PKA  cAMP-dependent protein kinase
PKB, PKC  protein kinase B and C
PLC  phospholipase C (similarly, PLA)
PMA  phorbol 12-myristate 13-acetate
PMSF  phenylmethylsulfonyl fluoride
PO2  partial O2 pressure or O2 tension (similarly, PCO2)
PKA  cAMP-dependent protein kinase
PKB, PKC  protein kinase B and C
PLC  phospholipase C (similarly, PLA)
PMA  phorbol 12-myristate 13-acetate
PMSF  phenylmethylsulfonyl fluoride
PO2  partial O2 pressure or O2 tension (similarly, PCO2)
POPOP  1,4-bis[2-(5-phenyloxazolyl)]benzene
PO 2 2,5-diphenyloxazole
psi  pounds per square inch
PTK  protein tyrosine kinase
RIA  radioimmunosay
RNA  ribonucleic acid (also, mRNA, rRNA, cRNA, tRNA)
rNase  ribonuclease
rpm  revolutions per minute
RT  reverse transcriptase
SAPK  stress-activated protein kinase
SAPK  stress-activated protein kinase kinase (also known as SKK)
SITS  4-acetamido-4′-tosyl-L-arginine methyl ester
SOD  superoxide dismutase
STAT  signal transducer and activator of transcription
TAME  Nα-tosyl-L-arginine methyl ester
TCA  trichloroacetic acid
TEAE  triethylaminoethyl
TGG  3′-N′-N′-N′′-N′′′-N′′′-N′′′′-N′′′′-morpholino)propanesulfonic acid
TLC  thin-layer chromatography
TNF  tumor necrosis factor
TPA  12-O-tetradecanoylphorbol 13-acetate
TPR  Nα-tosyl-L-phenylalanine chloromethyl ketone
TTX  tetrodotoxin
UV  ultraviolet
VCAM  vascular cell adhesion molecule
VEGF  vascular endothelial growth factor
VIP  vasoactive intestinal peptide
VLDL  very low-density lipoprotein
Vmax  maximum velocity or maximum rate of change or transition