

MINI P. KURIAN

CONTACT INFORMATION

Department of Mathematics and Statistics
Arizona State University
Tempe AZ 85287-1804

Phone: (480) 965-2311
E-mail: kurian@mathpost.la.asu.edu
URL: www.public.asu.edu/~mputhaya

RESEARCH INTERESTS

Computational Neuroscience, Mathematical Biology

EDUCATION

Arizona State University , Tempe, AZ, USA PhD Mathematics	Aug 2004 - May 2009 (Expected)
University of Massachusetts , Amherst, MA, USA MS Physics	Aug 2001 - Jul 2004
Indian Institute of Technology , Chennai, India MSc Physics	Jul 1999 - Jul 2001
Mahatma Gandhi University , Kottayam, India BSc Physics	Jun 1996 - Jun 1999

ADDITIONAL TRAINING

Methods in Computational Neuroscience Course 2006 Marine Biology Lab, Woods Hole, MA, USA Directors: Bard Ermentrout, John White Project title: "Modeling sleep awake mechanisms"	Jul 30 - Aug 27
Okinawa Computational Neuroscience Course 2006 Okinawa Institute of Science and Technology, Okinawa, Japan Directors: Kenji Doya, Upinder Bhalla, Nicholas Le Nov'ere, Shinya Kuroda Project title: "Influence of dendritic structure on firing pattern in model neocortical neurons"	Jun 26 - Jul 07
NCBI Training: A Field Guide to GenBank and NCBI Biological Resources 2006, ASU Tempe, AZ, USA	Jan 27

WORKSHOPS AND CONFERENCES

- Dynamical Systems in Biology, 2008**, Courant Institute of Mathematical Sciences, NYU Apr 12 - Apr 13
- Society for Neuroscience Meeting 2007**, San Diego, CA Nov 02 - Nov 07
- Computational Neuroscience Meeting 2007**, Toronto, Canada Jul 07 - Jul 12
- ASU - BNI Neuroscience Symposium 2006**, Barrow Neurological Institute, Phoenix, AZ Nov 4
- 2nd Annual Biologically Accurate Modeling Meeting 2006**, World Association of Modeling, San Antonio, TX Mar 23 - Mar 25
- Probabilistic Models of Cognition: The Mathematics of Mind 2005**, Institute of Pure and Applied Mathematics Workshop, UCLA, CA Jan 23 - Jan 29
- Opportunities in Biology for Physicists 2004**, American Physical Society Topical Conference San Diego, CA Jan 30 - Feb 01
- New England Particle Physics Retreat 2002**, Woodstock, NH Aug 18 - Aug 23

RESEARCH PROJECTS

- Modeling of Motor Neuron Plasticity after Spinal Cord Injury**
Arizona State University, Tempe, AZ, USA Dec 2005 - Till Date
Mathematical modeling of motor neuron plasticity after incomplete spinal cord injury
- Computational Modeling of Circadian Rhythms**
University of Massachusetts, Amherst, MA, USA Sep 2003 - Aug 2004
Study of transient internal desynchronization (jetlag, shift work, SAD) by computational modeling of coupled oscillators
- Bacteriolytic Therapy of Cancer Cells**
University of Massachusetts, Amherst, MA, USA Sep 2003 - Aug 2004
Engineering therapeutics targeted to tumors using bacteria
- dE/dx measurements in BABAR Drift Chamber**
University of Massachusetts, Amherst, MA, USA May 2002 - Jan 2003
Study of matter-antimatter asymmetries (CP violations) in BABAR B-Meson factory at Stanford Linear Accelerator Center using Monte Carlo Simulations
- Quantum Copying Machines**
Indian Institute of Technology Madras, Chennai, India Sep 2000 - Apr 2001
The quality of original and copy modes of a quantum copying machine was analytically evaluated by calculating the Hilbert Schmidt Norms

Neutrino Masses and Oscillations

Institute of Mathematical Sciences, Chennai, India

Jun 2000

Standard Model of Electroweak Interactions, the hierarchy problem in High Energy Physics, neutrino problems, experimental setups, the MSW effect and the effects of flavor mixing

Introduction to Field Theory

Institute of Mathematical Sciences, Chennai, India

May 2000

Relativistic wave equations, quantum electrodynamics, Feynman rules for electroweak interactions, and applications to estimate cross sections for spinless electron - muon scattering and neutrino - electron scattering

POSTER PRESENTATIONS

- [P-1] M. Kurian, and S. Crook, "Modeling spasticity in spinal motor neurons following spinal cord injury (SCI). ", *Society for Neuroscience*, San Diego, CA, USA, October 2007.
- [P-2] M. Kurian, and S. Crook, "Two-compartment models of spasticity in spinal motor neurons following spinal cord injury. ", *Computational Neuroscience Meeting*, Toronto, Canada, July 2007.
- [P-3] M. Kurian, S. Crook, and B. Hillen "Modeling motoneurons after spinal cord injury in acute and chronic stages. ", *Okinawa Computational Neuroscience Course*, Okinawa, Japan, June 2006.

HONORS AND AWARDS

Arthur Quinton Outstanding Teaching Assistant Award, University of Massachusetts, Amherst, 2001-2002

University Grant Commission Junior Research Fellowship and National Eligibility Test for Lectureship, India, 2000

IIT Madras Merit Scholarship, IIT Madras, Chennai, India, 1999-2001

Paper prize Nuclear Power and Radio-Isotope Applications Xth All India Essay Contest in Nuclear Science and Technology, DAE, Government of India, 1998

46th in National Science Talent Examination, India, 1995

GRANTS

Dynamical Systems in Biology Workshop Travel Grant, CIMS, NYU, 2008, USD:550

Computational Neuroscience Meeting Travel Grant, 2007, USD:300

Arizona State University Division of Graduate Studies Travel Grant to attend Computational Neuroscience Meeting, 2007, USD:350

MBL Grant for attending the Methods in Computational Neuroscience Course, Woodshole, MA, 2006, USD:2000

Okinawa Institute of Science and Technology Full Scholarship and Travel Grant to attend Okinawa Computational Neuroscience Course, 2006

Graduate Professional Students Association Travel Grant to attend the World Association of Modeling-2nd Annual Biologically Accurate Modeling Meeting, 2006, USD:500

Arizona State University Division of Graduate Studies Travel Grant to attend the World Association of

Modeling-2nd Annual Biologically Accurate Modeling Meeting, 2006, USD:350

World Association of Modeling Travel Grant for attending 2nd Annual Biologically Accurate Modeling Meeting, 2006, USD:800

IPAM Full Grant for attending Probabilistic Models of Cognition: The Mathematics of Mind Workshop, 2005

APS Grant for attending Topical Conference, Opportunities in Biology for Physicists, 2004, USD:500

SOFTWARE ABILITIES

Operating Systems: UNIX, LINUX, Windows

Programming languages : C++, Perl, ROOT, BASIC

Application packages : Matlab, Mathematica, Maple, XPP, Neuron, Genesis, NeuroConstruct, Endnote, Adobe Photoshop, MS Office, Latex

WORK EXPERIENCE

Graduate Teaching Associate

Department of Mathematics, Arizona State University, Tempe, AZ

Aug 2004 - Present

Courses Taught: College Algebra, Financial Mathematics, Pre Calculus, College Mathematics, Brief Calculus, Calculus for Engineers

Duties included class lecturing, tutoring students, handling student issues during office hours, grading homework assignments and exams and awarding course grades

Graduate Student Organizing Coordinator

University of Massachusetts, Amherst, MA,

Sep 2003 - May 2004

Organizing graduate student activities, departmental meetings, handling grievances, and public relations

Teaching Assistant

University of Massachusetts, Amherst, MA,

Sep 2001 - May 2002, Feb 2003 - May 2003

Course Taught: Physics Laboratory Course in Mechanics

Duties included lecturing in laboratory sessions and grading laboratory reports

Research Assistant

University of Massachusetts, Amherst, MA,

Jun 2002 - Jan 2003

Coding and simulating high energy physics problems for BABAR B-Meson factory at Stanford Linear Accelerator Center

ACADEMIC AND PROFESSIONAL SERVICE

Co-organizer of Workshop on Role of computational neuroscience in integrating Brain - Machine interface CNS Meeting, Toronto, Canada, Jul 8 - 12, 2007

Grant Reviewer ASU, Aug 2004 - Aug 2007

Selecting graduate level scientific projects for funding by Graduate Professional Students Association, Arizona State University

REFERENCES

Prof. Sharon Crook
Department of Mathematics
Arizona State University
Tempe, AZ 85287-1804
Voice: (480)965-0403
E-mail: Sharon.Crook@asu.edu

Prof. Ranu Jung
Harrington Department of Bioengineering
Arizona State University
Tempe, AZ 85287-9709
Voice: (480)965-9052
E-mail: Ranu.Jung@asu.edu