

# Curriculum Vitae

Prashanth Jaikumar

*Faculty member, Theoretical Physics Group*

*The Institute of Mathematical Sciences, C.I.T Campus, Taramani, Chennai 600013 India*

*Phone:+91(44)2254-1856 Email: jaikumar@imsc.res.in Fax:+ 91(44)2254-1586*

**Visiting Scientist, Physics Division, Argonne National Laboratory**

**Phone:1(630)252-4109 Email: jaikumar@imsc.res.in Fax:1(630)252-3903**

## Personal data

---

Current Address: *516 Harrison Street Apt C*  
(USA) *Oak Park, Illinois 60304 USA*

Permanent Address: *2B, no.3, 6th cross street, CIT colony*  
(India) *Mylapore, Chennai 600004*

Permanent Resident: *Canada*

Citizen: *India*

## Education

August 1992 to August 2002

Ph.D. in Physics (2002)  
Stony Brook University, New York, USA *August 1997 to August 2002*

Master of Science in Physics (1997)  
Indian Institute of Technology, Delhi, India *August 1995 to July 1997*

Bachelor of Science with Honors in Physics (1995)  
St. Stephens College, Delhi University, Delhi, India *August 1992 to July 1995*

## Employment

August 2002 to present

Visiting Scholar, Argonne National Laboratory *May 2008 to December 2008*

Fellow **E**, Institute of Mathematical Sciences *July 2007 to present*

Post-doctoral associate, Ohio University *September 2006 to June 2007*

Post-doctoral appointee, Argonne National Laboratory *September 2004 to August 2006*

Post-doctoral researcher, McGill University *September 2002 to August 2004*

## Teaching and Course Development

August 1997 to May 2008

High energy physics journal club (Organizer)	<i>Fall 2007, Spring 2008</i>
Graduate seminar (lecture series)	<i>Spring 2007</i>
Quantum Physics for Engineers	<i>Spring 2003</i>
Special topics course: Solitons and Instantons	<i>Fall 2002</i>
Advanced Electronics Laboratory (Junior Undergraduates)	<i>Fall 1998</i>
Calculus for Engineers & Pre-meds	<i>Spring 1998</i>
Laboratory (Classical Physics)	<i>Fall 1997</i>

## References

### **Professor Charles Gale**

*Chair, Physics Department  
McGill University  
3600 University Avenue  
Montreal, Quebec H3A 2T8 Canada*

*Email: [gale@hep.physics.mcgill.ca](mailto:gale@hep.physics.mcgill.ca)*

*Ph: +1(514)398-6483*

### **Professor Madappa Prakash**

*Department of Physics & Astronomy  
Ohio University  
Athens, Ohio 45701 USA*

*Email: [prakash@harsha.phy.ohiou.edu](mailto:prakash@harsha.phy.ohiou.edu)*

*Ph: +1(740)593-1716*

### **Professor Thomas Schäfer**

*Department of Physics  
North Carolina State University  
Raleigh, North Carolina 27695-8202*

*Email: [thomas\\_schaefer@ncsu.edu](mailto:thomas_schaefer@ncsu.edu)*

*Ph: +1(919)513-7199*

### **Professor Craig D. Roberts**

*Chief, Physics Division  
Argonne National Laboratory  
Argonne, Illinois 60439 USA*

*Email: [cdroberts@anl.gov](mailto:cdroberts@anl.gov)*

*Ph: +1(630)252-4095*

**Professor Rachid Ouyed**  
*Department of Physics & Astronomy*  
*University of Calgary*  
*2500 University Drive NW*  
*Calgary, Alberta T2N 1N4 Canada*

*Email: [ouyed@phas.ucalgary.ca](mailto:ouyed@phas.ucalgary.ca)*

*Ph: (403)210-8418*

**Professor Ismail Zahed**  
*Department of Physics & Astronomy*  
*Stony Brook University*  
*Stony Brook, New York 11794 USA*

*Email: [Ismail.Zahed@stonybrook.edu](mailto:Ismail.Zahed@stonybrook.edu)*

*Ph: +1(631)632-8129*

**Professor Sanjay Reddy**  
*Theoretical division T-16*  
*Los Alamos National Laboratory*  
*Los Alamos, New Mexico 87545 USA*

*Email: [reddy@lanl.gov](mailto:reddy@lanl.gov)*

*Ph: +1(505)665-0455*

## Invited Talks

---

### **Astrophysics of Quark Matter**

*Plenary Talk, DAE-symposium on high-energy physics, Benares, India (December 2008)*

### **r-modes and critical spin frequency of compact stars**

*Workshop on Equation of state in Astrophysics, Argonne, Illinois USA (August 2008)*

### **r-mode instability and critical rotation rates of compact stars**

*The Ohio State University, Columbus, Ohio, USA (July 2008)*

### **Neutron stars, the Equation of State and the r-process**

*The University of Chicago, Chicago, Illinois, USA (June 2008)*

### **Neutron stars: Astrophysical laboratories for nuclear and sub-nuclear physics**

*Argonne National Laboratory, Illinois, USA (June 2008)*

### **r-modes in color superconducting matter**

*Toshali Sands, Bhubaneswar, India (February 2008)*

### **High-density matter and neutron stars**

*Physical Research Laboratory, Ahmedabad, India (October 2007)*

### **r-process nucleosynthesis from decompression of neutron star matter**

*North Carolina State University, North Carolina, USA (February 2007)*

### **r-process in a low-entropy environment**

*JINA collaboration meeting, Michigan State University, USA (February 2007)*

### **The Quark-Nova Scenario and r-process nucleosynthesis**

*CASCA Bicentennial meeting, Calgary, Canada (June 2006)*

### **Nucleosynthesis in a low-entropy environment**

*Washington University at St. Louis, Missouri, USA (May 2006)*

### **Nucleosynthesis: From quarks to stars**

*Institute of Mathematical Sciences, Chennai, India (January 2006)*

### **Microphysics of QCD and Quark stars**

*Tata Institute of Fundamental research, Mumbai, India (January 2006)*

### **On Quark star structure and observational signals**

*Workshop on High-Energy Physics Phenomenology, Institute of Physics (IOP), Bhubaneswar, Orissa, India (January 2006)*

### **The Quark Nova as a site for the r-process**

*Canadian Institute for Theoretical Astrophysics (CITA), Toronto, Canada (November 2005).*

### **Mass-radius relations for solitonic stars**

*McGill University, Montreal, Canada (July 2005).*

### **Strange stars have strange surfaces**

*Los Alamos National Laboratory, Los Alamos, New Mexico, USA (June 2005).*

**The nuclear astrophysics of dense quark matter**

*Ohio University, Athens, Ohio, USA (April 2005).*

**Quarks in Neutron stars : A new paradigm in astrophysics**

*Colloquium, University of Calgary, Calgary, Canada (March 2005).*

**r-process nucleosynthesis in compact stars**

*McGill University, Montreal, Canada (February 2005).*

**The many phases of dense quark matter**

*Colloquium, Tata Institute of Fundamental Research, Mumbai, India (August 2004).*

**Color superconductivity in Neutron stars**

*Institute of Mathematical Sciences, Chennai, India (July 2004).*

**Surface photon emission from quark stars**

*Institute for Nuclear Theory, Seattle, Washington, USA (April 2004).*

**Color superconductivity in dense quark matter**

*Argonne National Laboratory, Argonne, Illinois (February 2004).*

**Photon and neutrino emission rates for bare quark stars**

*Ohio State University, Columbus, Ohio, USA (August 2003).*

**BCS versus Overhauser pairing in dense QCD**

*Brookhaven National Laboratory, Upton, New York, USA (January 2002).*

**Conference & Workshop Presentations**

---

**Workshop on Equation of state in Astrophysics, Argonne**

*International workshop on the equation of state of matter*

*August 25-29, 2008*

**Astrophysics of quark matter; Toshali Sands, Orissa**

*International meeting on quarks in astrophysics*

*February 14-17, 2008*

**Quark matter 2008; Jaipur, India**

*International meeting on heavy-ion physics*

*February 4-10, 2008*

**CASCA Bicentennial meeting; Calgary, Canada**

*International meeting of the Canadian Astronomical Society*

*June 1-4, 2006*

**Hot Quarks 2006; Sardinia, Italy**

*International workshop on ultra-relativistic heavy-ion collisions*

*May 15-20, 2006*

**WHEPP-9; Bhubaneswar, Orissa, India**

*International workshop on high-energy physics phenomenology*

*January 3-14, 2006*

**Mid-west Theory Get-Together; Argonne, Illinois, USA**

*Annual meeting of nuclear physicists from universities in the US mid-west.*

*Fall 2004,2005,2006,2008*

**Division of Nuclear Physics Meeting (DNP); Chicago, Illinois, USA**

*Meeting of American Physical Society's Division of Nuclear Physics.*

*Oct 27-30, 2004*

**Montreal-Rochester-Syracuse-Toronto Conference (MRST)** *May 12-14 2004*  
*Conference on high energy physics from Quarks to Cosmology; Montreal, Canada.*

**Quark Matter 2004; Oakland, California, USA** *January 11-17, 2004*  
*International conference on ultra-relativistic heavy-ion collisions.*

**Chiral Dynamics of Hadrons and Hadrons in a medium** *June 26-28, 2003*  
*Workshop on chiral nuclear dynamics, Valencia, Spain.*

**Topics in Heavy-Ion Collisions; Montreal, Canada** *May 26-28, 2003*  
*International conference on heavy-ion collisions.*

**XIIIth Nuclear Physics Summer School; Bar Harbor, Maine, USA** *June 12-22, 2001*  
*Lectures on special topics in Nuclear Physics.*

**Quark Matter 2001; Stony Brook, New York, USA** *January 15-20, 2001*  
*International conference on ultra-relativistic heavy-ion collisions.*

### **Organizational activities**

---

**Scientific Organizing Committee Member** *May 20-25, 2009*  
*Compact stars in the QCD Phase Diagram II, conference on compact stars and quark matter in Beijing, China*

**Science Outreach event, outreach program in physics** *March 24-25, 2008*  
*for college students from U. Mysore, Karnataka, India*

**Science Day, outreach program in physics for college students in Chennai** *February 29, 2008*

**Local organizer**  
**WHEPP-10, workshop on high-energy physics** *January 2-13, 2008*  
*and phenomenology*

**Theory Seminar co-ordinator** *Fall 2005, Spring 2006*  
*Physics division, Argonne National Laboratory*

**Local support staff, XVIIIth Mid-west Theory get-together** *October 7/8, 2005*  
*Physics division, Argonne National Laboratory*

**Nuclear Theory Seminar co-ordinator** *Fall 2003, Spring 2004*  
*Center for High-energy physics, McGill University*

**Local support staff, Quark Matter 2001** *January 15-20, 2001*  
*Stony Brook University*

### **Extended visits for Collaboration**

---

**McGill University; Montreal, Canada** *October 22-October 26, 2008*  
*(Host: C. Gale)*

**TRIUMF; Vancouver, Canada** *August 11-August 16, 2008*  
*(Host: A. Schwenk)*

<b>University of Calgary; Calgary, Canada</b> (Host: R. Ouyed)	July 19-August 18, 2008
<b>Argonne National Laboratory; Chicago, USA</b> (Host: C. D. Roberts)	May-December 2008
<b>Physical Research Laboratory; Gujarat, India</b> (Host: H. Mishra)	October 28-November 2, 2007
<b>Canadian Institute for Theoretical Astrophysics; Toronto</b> (Hosts: R. Ouyed & K. Mori)	November 12-19, 2006
<b>Los Alamos National Laboratory; New Mexico, USA</b> (Host: S. Reddy)	June 4-8, 2005
<b>University of Calgary; Alberta, Canada</b> (Host: R. Ouyed)	October 15-25, 2004
<b>McMaster University; Ontario, Canada</b> (Host: R. Bhaduri)	July 4-8, 2004
<b>Stony Brook University; New York, USA</b> (Host: M. Prakash)	August 16-23, 2003
<b>Ohio State University; Ohio, USA</b> (Host: A. Schwenk)	August 9-15, 2003

## Awards and Honors

---

<b>Peter B. Kahn fellowship</b> <i>Conference travel award for select graduate students.</i>	May 2001
<b>Neeraj Srivastav award</b> <i>For excellence in physics and highest GPA in the graduating class (Masters level).</i>	August 1997

## Professional societies and responsibilities

---

<b>Member:</b> <i>American Physical Society</i>	2004-present
<b>Referee:</b> <i>Physical Review C, Physical Review D, Physical Review Letters, Astronomy and Astrophysics, International Journal of Modern Physics A</i>	2004-present

## Overview of publication record

---

**28 Regular published articles, 310 citations**

*Physical Review C* (4), *Physical Review D* (5), *Physical Review Letters* (2), *Physics Letters B* (2), *International Journal of Modern Physics A* (2), *Modern Physics Letters A* (1), *The Astro-*

*physical Journal (3), Astronomy & Astrophysics (2), Journal of High Energy Physics (2), Nuclear Physics B (1), Pramana: Indian Journal of Physics (2), European Physics Journal C (1), Few-Body systems (1).*