

CURRICULUM VITAE

Natalia Ivanova

Canadian Institute for Theoretical Astrophysics
McLennan Labs, University of Toronto
60 St. George Street
Toronto, Ontario, M5S 3H8
Canada

Email: nata@cita.utoronto.ca
Office: (416) 978-6852
FAX: (416) 978-3921
Secretary: (416) 978-6879
Web: <http://www.cita.utoronto.ca/~nata>

Degrees

- Jan 2003** Doctorate degree (**D.Phil.**) in Astrophysics, granted by the University of Oxford. Thesis "*Slow mergers of massive stars*". Adviser: Philipp Podsiadlowski.
- Jun 1995** **M. Sc.** with honors in Astronomy and Mathematics, granted by the St. Petersburg State University (Russia). Senior Thesis: "*Differential Rotation of Massive Main-Sequence Stars*". Adviser: Pavel Denissenkov.

Post-doctoral training

- 2005-present** CITA Postdoctoral Fellow at the Canadian Institute for Theoretical Astrophysics (Canada)
- 2002-2005** Theory Postdoctoral Fellow at the Northwestern University (USA):
- 2004-2005 – the position was supported by personal *Chandra* theory grant (local adviser V. Kalogera)
- 2002-2004 – the position was collaboratively supported by V. Kalogera, F. Rasio and R. Taam

Pre-doctoral training and long-term scientific visits

- 2006, Nov-Dec** Visiting Researcher, MPfA, Garching (Germany)
- 2006, Jan-Feb** Visiting Researcher, KITP, Santa Barbara (USA)
- 2001-2002** Visiting Scholar at the Northwestern University (USA), Department of Physics and Astronomy, with V. Kalogera, F. Rasio and R. Taam
- 1999, Jun-Sep** Visiting Graduate Student at MPfA, Garching (Germany), with H. Spruit
- 1998-2001** Graduate student at the University of Oxford, in Astrophysics, with Ph. Podsiadlowski
- 1997-1998** Visiting Graduate Student at the University of Oxford (UK), in Astrophysics, with Ph. Podsiadlowski
- 1995-1997** Graduate student at the St. Petersburg State University (Russia), the Astronomy Department, with P. Denissenkov
- 1990-1995** Undergraduate student at the St. Petersburg State University, Faculty of Mathematics and Mechanics, the Astronomy Department

Awards, Research Grants and Fellowships

- 2005-present** CITA Fellowship
- 2004-2005** Chandra theory grant (primary investigator): "*X-ray binary formation in elliptical galaxies: the role of dynamical processes*"(\$76,235)
- 1998-2001** Dulverton Scholarship
- 1998-2001** Overseas Research Student (ORS) Award
- 1997-1998** OSI/FCO Oxford Chevening Scholarship
- 1994-1995** Title "Soros Student" and Scholarship from Soros Foundation

Teaching experience and student supervision

- 2005-present** Adviser of undergraduate student **Eric Chan** (the University of Toronto), for the research project on blue stragglers (primordial and collisional populations). Eric is writing the paper that describes his results and has his results being reported at a conference. Co-adviser of external undergraduate student **Olek Sadowski** from the University of Warsaw (detailed studies of the black holes population in globular clusters)
- 2002-2005** Co-adviser of undergraduate students at Northwestern University: **Mike Henninger** and **Todd Levin** (binary evolution of ultra-luminous X-ray sources and other binaries with compact objects, evolution through the mass-transfers phases), **Ryan O'Leary** (dynamical evolution of a dense sub-cluster of black holes, intermediate mass black hole formation) and **Laura Blecha** (intermediate mass black hole in dense stellar systems: close binary interactions and mass transfers). All supervised students have successfully published results of their research in refereed papers (see my publication list)
- 1999-2001** Tutor (TA) in the third year astronomy option at the University of Oxford
- 1996-1997** TA for the course "Stellar evolution" at the St. Petersburg State University

Research Interests

- Stellar Astrophysics: detailed evolution of single and binary stars: internal structure, convection and nucleosynthesis; evolution of merger products and post-collisional stars.
- High Energy Astrophysics: accreting binaries, SN Ia, γ -ray burst progenitors, pulsars, ultra-luminous X-ray sources
- Stellar Populations: populations of massive stars, X-ray sources and compact binaries in our and other galaxies, stellar populations and X-ray sources in globular clusters, LIGO and LISA sources, population synthesis codes for binaries and triples
- Stellar Dynamics: binaries and triples in dense stellar systems – formation, stability and evolution, their effect on the stellar population; formation of exotic objects, intermediate mass black holes
- Hydrodynamics: common envelope physics, slow mergers (including nucleosynthesis during the merger process) and physical collisions.

Astrophysics community service

Reviewer for Monthly Notices of the Royal Astronomical Society.

- 2005** NSF review panel on interacting binaries
- 2005** SOC for **MO**deling **DE**nse **ST**ellar systems conference
(see <http://www.astro.northwestern.edu/MODEST6/>)

Invited/Review talks

- 2006** "*Population Synthesis with Dynamics*", JD06 on "Neutron Stars and Black Holes in Star Clusters" at XXVIth IAU GA, Prague, August 13-25, invited talk
- 2006** "*Stellar Dynamics & Feedback Connections to Stellar Evolution*", JD14 on "Modeling Dense Stellar Systems" at XXVIth IAU GA, Prague, August 13-25, invited talk
- 2005** "*Population Synthesis with Dynamics*", conference "MODEST-6", Evanston, August 29-31, review talk
- 2004** "*Formation and Evolution of Compact Binaries in Globular Clusters*", conference "Interacting Binaries: Accretion, Evolution and Outcomes", Cefalu, July 4-10, invited talk
- 2004** "*Binary Evolution and Neutron Stars in Globular Clusters*", Aspen, conference "Binary Radio Pulsars", Jan 11-17, 2004, invited talk

Seminars and Colloquiums

- 2006, Dec** Northwestern University, Astrophysical Theory (Evanston, USA)
- 2006, Nov** Max-Planck-Institut fuer Astrophysik (Garching, Germany)
- 2006, Oct** University of British Columbia (Vancouver, Canada)
- 2006, May** McGill University (Montreal, Canada)
- 2006, Mar** McMaster University (Hamilton, Canada)
- 2005, Jul** Los-Alamos National Lab, T-6 group (Los-Alamos, USA)
- 2004, Oct** Dartmouth college, Physics and astronomy department (Hanover, USA)
- 2004, Oct** Institute for Advanced Studies, School of Natural Science, Astrophysics (Princeton, USA)