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## PERSONAL

Born April 20, 1964, in Brussels, Belgium.  
US and Belgian citizenships.

## EDUCATION

- 1985 – 1991 [Cornell University](#), Ithaca, New York, Department of Physics. Degrees: M.S. (1988), Ph.D. (1991). Ph.D. Thesis: “Hydrodynamic Calculations of Stellar Interactions.” Ph.D. Thesis advisor: Prof. Stuart L. Shapiro.
- 1980 – 1985 [Université Libre de Bruxelles](#), Brussels, Belgium, Faculté des Sciences Appliquées. Degree: Ingénieur Physicien (M.S. in Applied Physics), *Avec Grande Distinction* (1985). Thesis: “Charge Division in Drift Chambers Operated in Streamer Mode.” Thesis advisor: Prof. Jean Sacton.

## RESEARCH INTERESTS

**Theoretical Astrophysics:** dynamics of dense stellar systems (globular clusters, galactic nuclei, massive black holes); exoplanets (dynamics and formation); hydrodynamic stellar interactions (stellar collisions and mergers, binary coalescence, common envelope evolution); relativistic astrophysics (neutron stars and black holes, gravitational waves, relativistic star clusters); dynamics of binary and multiple star systems; radio pulsar timing and applications

**Computational Astrophysics:** numerical hydrodynamics, numerical relativity, Monte Carlo methods,  $N$ -body simulations, parallel algorithms.

## EMPLOYMENT

- 2001 – [Northwestern University](#), Evanston, Illinois:  
Joseph Cummings Professor of Physics (2009- );  
Professor of Physics and Astronomy (2006- );  
Associate Professor of Physics and Astronomy (2001-2006).
- 1995 – 2002 [Massachusetts Institute of Technology](#), Cambridge, Massachusetts:  
Associate Professor of Physics (2001-2002, on leave);  
Assistant Professor of Physics (1995-2001).
- 1992 – 1995 [Institute for Advanced Study](#), Princeton, New Jersey:  
Member, School of Natural Sciences.
- 1986 – 1992 [Cornell University](#), Ithaca, New York:  
Research Associate, Department of Astronomy (1991-1992);  
Research Assistant, Department of Astronomy (1988-1991);  
Teaching Assistant, Department of Physics (1986-1988).

## AWARDS AND HONORS

- 2020 Elected Legacy Fellow of the American Astronomical Society.
- 2019 Brouwer Career Award (American Astronomical Society, Division on Dynamical Astronomy).
- 2018 Elected AAAS Fellow (American Association for the Advancement of Science).
- 2018 Salpeter Lecturer (Cornell University, College of Arts & Sciences).
- 2006 – 2007 Research Mentor Award (Northwestern University, Weinberg College of Arts and Sciences).
- 2006 Fellow of the American Physical Society.
- 2004 – 2005 Faculty Honor Roll (Northwestern University Associated Student Government).
- 1996 – 2000 Sloan Research Fellow (Alfred P. Sloan Foundation).
- 1992 – 1995 Hubble Fellow (NASA).
- 1991 Graduate Student Prize (Astronomical Society of New York).
- 1985 – 1986 Hoover Foundation Fellow (Belgian American Educational Foundation).

## MENTORING

- Elena González Prieto, NSF Graduate Fellow (2021 — )
- Rachel Zhang (2021 — )
- Fulya Kiroğlu, Fulbright Scholar (2020 — )
- Miguel Martinez (2020 — )
- Dany Atallah, NSF Graduate Fellow (2019 — )
- Newlin Weatherford (2018 – )
- Claire (Shi) Ye, NU PhD '22
- Kyle Kremer, NSF Graduate Fellow, NU PhD '19
- Jason Hwang, NSF GK-12 Fellow, NU PhD '17
- Joel Schwartz, NSF GK-12 Fellow, NU PhD '16
- Carl Rodriguez, NSF Graduate Fellow and GK-12 Fellow, NU PhD '16
- Meagan Morscher, NSF GK-12 Fellow, NU PhD '14
- Bharath Pattabiraman, NU PhD '14 (in Computer Science)
- Sanghamitra Goswami, NU PhD '13
- Sourav Chatterjee, NU PhD '10
- Emmanouela Rantsiou, NU PhD '09
- Genya Takeda, NU PhD '08
- Atakan Gürkan, NU PhD '05
- John Fregeau, MIT PhD '04
- Joshua Faber, MIT PhD '01
- Kriten Joshi, MIT PhD '00

## POSTDOCTORAL FELLOWS MENTORED

- Giacomo Fragione (CIERA Fellow, 2019 – )
- Mario Spera (Marie Curie Fellow, 2018 – 2020)
- Fabio Antonini (CIERA Fellow, 2015 – 2018)
- Sourav Chatterjee (CIERA Fellow, 2014 – 2018)
- Francesca Valsecchi (CIERA Fellow, 2013 – 2016)
- Smadar Naoz (Gruber Foundation Fellow, 2009 – 2011)
- Paul Kiel (2009 – 2011)
- Edward Thommes (2007 – 2009)
- Stefan Umbreit (2006 – 2010)
- Soko Matsumura (2006 – 2009)
- John Fregeau (NASA Chandra Fellow, 2005 – 2008)
- Natasha Ivanova (2002 – 2007)
- Marc Freitag (2002 – 2004)
- Joshua Faber (2001 – 2004)
- Simon Portegies Zwart (NASA Hubble Fellow, 1997 – 2000)

## TEACHING EXPERIENCE

2001 – **Northwestern University, Department of Physics and Astronomy:**

- ASTRON 449: 'Stellar Dynamics' (graduate-level introduction to galactic dynamics at the level of *Binney & Tremaine*).
- ASTRON 445: 'General Relativity and Applications' (graduate-level introduction to general relativity and relativistic astrophysics).
- ASTRON 390-JR: 'Astrobiology' (Junior Research Seminar).
- ASTRON 345: 'Introduction to General Relativity' (undergraduate introduction to relativity at the level of *Hartle*)
- ASTRON 331: 'Astrophysics' (advanced undergraduate introduction to theoretical astrophysics).
- ASTRON 110: 'From Copernicus to Hawking: the People and Ideas that Shaped Modern Cosmology' (freshman seminar).
- PHYS 135: 'General Physics' (Section Instructor).
- PHYS 125-1: Physics for ISP (honors level introduction to classical mechanics)
- PHYS 110: 'Einstein's Outrageous Legacy' (freshman advising seminar)
- PHYS 110: 'Origins: from Big Bang Cosmology to Astrobiology' (freshman advising seminar).
- PHYS 110: 'The Physics of Armageddon' (freshman seminar).
- AGEP Professor - Midwest Crossroads AGEP (NSF Alliances for Graduate Education and the Professoriate) - a partnership of Northwestern, Indiana and Purdue University to increase minority participation in graduate studies and academia.
- supervised 11 PhD Theses (A. Gürkan, PhD '05; G. Takeda, PhD '08; E. Rantsiou, PhD '09; S. Chatterjee, PhD '10; S. Goswami, PhD '13; B. Pattabiraman, PhD '14; M. Morscher, PhD '15; C. Rodriguez, PhD '16; J. Hwang, PhD '17; K. Kremer, PhD '19; C. Shi Ye, PhD '21).
- supervised more than 40 REU and senior thesis students, 17 graduate students, and 12 postdocs (S. Chatterjee, C. Deloye, J. Faber, J. Fregeau, M. Freitag, N. Ivanova, P. Kiel, S. Matsumura, S. Naoz, E. Thommes, S. Umbreit, F. Valsecchi).

1996 – 2001 **MIT, Department of Physics:**

- 8.901: 'Astrophysics I' (graduate-level introduction to stellar astrophysics).
- 8.03: 'Physics III' (sophomore-level course at the level of Crawford, Waves).
- freshman advising seminars on Astrophysics.
- supervised 3 PhD Theses (K. Joshi, PhD '00; J. Faber, PhD '01; J. Fregeau, PhD '03).
- supervised 9 Physics senior theses.
- supervised 17 undergraduate (REU/UROP) students, 5 graduate students, and one postdoctoral fellow (S. Portegies Zwart).
- supervised high-school students in the Research Science Institute program.

**ADMINISTRATIVE EXPERIENCE**

- 2013 – Editor for [The Astrophysical Journal Letters](#)
- 2015 – 2019 Member of the Advisory Board of the Kavli Institute for Theoretical Physics (KITP) at the University of California, Santa Barbara (Co-Chair, 2018-19).
- 2009 – 2013 Founding Co-Director, Northwestern University Center for Interdisciplinary Exploration and Research in Astrophysics ([CIERA](#))
- 2009 – [Aspen Center for Physics](#), General Board Member; member of the Summer Program Selection (2010, 2015), Summer Admissions (2011, 2014, 2017, 2018), Library (2012), and Nominations (2016) committees; Colloquium Committee (2013, member; 2014, chair); Assistant Scientific Secretary (2017-18); Scientific Secretary (2018-19); Honorary Member (2019 –).
- 2009 – 2011 American Astronomical Society Warner Prize and Pierce Prize Committee member.
- 2006 – 2012 Northwestern University, Member of the Administrative Board of The Graduate School.
- 2006 – 2008 Northwestern University, Limited Submissions Committee member.
- 2005 – 2012 Scientific Editor for [The Astrophysical Journal](#).
- 2005 – 2008 Northwestern University, Fulbright Fellowship Committee member.
- 2005 – 2006 Northwestern University, Department of Materials Science Program Review Committee member.
- 2005 American Physical Society, World Year of Physics Talent Search Evaluator.
- 2004 – 2012 American Astronomical Society Employment Committee member; chair (2010-11).
- 2001 – Northwestern University, Weinberg College of Arts and Sciences:  
Committee on Tenure (2016 – 2020);  
Committee on Appeals (2006 – 2011);  
Interdisciplinary Committee on Evolutionary Processes (2005 – 2011);  
Dean's ad-hoc committees (most years);  
[Integrated Science Program](#) Committee (2001 –).
- 2001 – Northwestern University, Department of Physics and Astronomy:  
Student Awards Committee member (2017-18);  
Director of Graduate Studies for Astronomy PhD Program (2016 – 2018);  
Faculty Search Committees (member 2002 – 03, 2015 – 16; chair 2008 – 09, 2016 – 17, 2021-22);  
Executive Committee member (2010 – 2017);  
Director of Graduate Studies (2006 – 2008);  
Promotion Committees (2007 – 08; 2008 – 09; 2014 – 15; 2018-19; 2022-23; 2023-24);  
Graduate Admissions (2006 – 07; 2009 – 10; 2014 – 15; 2015 – 16; 2022-23);  
Awards and Honors Committee (2005 – 09; chair 2014 – 15);  
Long-Term Planning Committee (member 2004 – 05; chair 2005 – 06);  
[Heilborn Lectures](#) Committee (2003 – 2005);  
Colloquium Committee (2004 – 06; 2010 – 12; 2021-22);  
Graduate Curriculum and Advising Committee (member 2001 – 2003; chair 2006 – 2008);  
Undergraduate Program Reform Committee (2002 – 2003);  
IGERT Nonlinear Dynamics Program Executive Committee (2002 – 2003);  
Graduate Program Reform Committee (2001 – 2002);
- 2001 Joint NSF/NASA [Task Force on Gravitational Wave Computation](#) (Chair: Saul Teukolsky).
- 1986 – 1991 MIT, Department of Physics:  
Astrophysics Colloquium Chair (1995 – 98);  
Graduate Admissions (1997, 1999);  
Astrophysics Web Site Administrator (1996 – 2001);  
Physics Theory Retreat Committee (1999 – 2001);  
CSR Space Planning Advisory Committee (1997 – 2001);  
Special Taskforce on Education Information (1997 – 98);  
two promotion committees.

- Proposal peer reviewer or review panel member/chair (US NSF, DOE, and NASA; European Research Council; Austrian Science Fund; Chilean CONICYT; Israel Science Foundation; French Agence Nationale de la Recherche; German DFG and Max Planck Society; Dutch

NWO; Canadian NSERC and Canada Research Chairs Program; UK PPARC and Royal Society; Polish National Science Centre; Hong Kong Research Grants Council).

- Peer reviewer for The Astrophysical Journal, Astronomy & Astrophysics, Icarus, Monthly Notices of the Royal Astronomical Society, Nature, Physical Review D, Physical Review Letters, Science.

## CONFERENCE ORGANIZATION

- International Conference on 'Extreme Solar Systems V' (Christchurch, New Zealand, March 2023; main organizer).
- MODEST-23 Conference on '[Star Clusters in the Post-Pandemic Era](#)' (Northwestern University, August 2023, SOC member).
- Aspen Winter Conference on '[eXtreme Black Holes](#)' (Aspen, CO, March 2023; SOC member).
- International Conference on '[Intermediate-Mass Black Holes: New Science from stellar Evolution to Cosmology](#)' (San Juan, PR, May 2022; SOC co-Chair with G. Fragione).
- Aspen Winter Conference on '[Dynamical Formation of Gravitational Wave Sources](#)' (Aspen, CO, January 2022; main organizer).
- MODEST-20 Conference on 'Dense Star Clusters in the Era of Large Surveys' (Tata Institute of Fundamental Research, Mumbai, India, February 2020, SOC member).
- International Conference on 'Extreme Solar Systems IV' (Reykjavik, Iceland, August 2019; main organizer).
- 12th International LISA Symposium (Chicago, Illinois, July 2018; SOC co-chair with S. Larson).
- MODEST-18 Conference on '[Dense Stellar Systems in the Era of Gaia, LIGO, and LISA](#)' (Santorini, Greece, June 2018; SOC co-chair with Andrea Ghez).
- International conference on 'Exoplanets and Planet Formation' (Shanghai, China, December 2017; SOC member).
- Aspen Summer Program on 'Astrophysics of Gravitational Radiation Sources and Multimessenger Astronomy in the Era of LIGO Detections', Organizer (with M. Campanelli, V. Kalogera, J. Krolik, & S. Sigurdsson), Aspen Center for Physics, July 2017.
- Aspen Winter Conference Formation and Dynamical Evolution of Exoplanets (Aspen, CO, March 2017; main organizer).
- [Fellows at the Frontiers](#) 2016 (Evanston, IL, August 2016; SOC Chair).
- [Binary Stars in Cambridge](#) 2016 (Cambridge, United Kingdom, July 2016; SOC member).
- International Conference on 'Extreme Solar Systems III' (Waikoloa, Hawaii, November 2015; SOC co-chair with M. Mayor).
- MODEST-14 Conference on '[The dance of stars: dense stellar systems from infant to old](#)' (Physikzentrum Bad Honnef, Germany, June 2014, SOC member).
- International Conference on 'Extreme Solar Systems II' (Jackson Hole, WY, September 2011; main organizer).
- Special Joint DAP/DNS Session on 'Neutron Stars and the Dense Matter Equation of State' at 2011 APS April Meeting (Anaheim, CA; co-organizer and co-chair with C. Horowitz).
- International Conference on 'The Evolution of Interacting Binaries' (Mykonos, Greece, June 2010; SOC member), in honor of Ron Webbink.
- Aspen Winter Conference on 'Formation and Evolution of Black Holes' ([Aspen Center for Physics](#), Feb 2010; main organizer).
- KITP Program on '[Formation and Evolution of Globular Clusters](#)', Coordinator (with A. Sills, E. Vesperini, & S. Zepf), UC Santa Barbara, January - April, 2009.
- Aspen Summer Program on '[Characteristics and Habitability of Super Earths](#)', Organizer (with E. Ford, L. Kaltenegger, & S. Seager), Aspen Center for Physics, August 2008.
- IAU Symposium 246 on '[Dynamical Evolution of Dense Stellar Systems](#)' (Capri, Italy, September 2007; SOC Member).
- International Conference on '[40 Years of Pulsars](#)' (Montreal, Canada, August 2007; SOC Member), celebrating the 40th anniversary of the discovery of the first radio pulsar by Bell Burnell and Hewish.
- International Conference on 'Extreme Solar Systems' (Santorini, Greece, June 2007; SOC co-chair and proceedings co-editor), in honor of [Alex Wolszczan](#).
- 'Symposium on Relativity and Astrophysics' (Cornell University, Ithaca, New York, June 2007; SOC Member), in honor of [Saul Teukolsky](#).
- Pale Blue Dot III (Adler Planetarium, Chicago, September 2006; SOC member, LOC member).
- IAU General Assembly Joint Discussion on 'Compact Objects in Dense Star Clusters' (Prague, Czech Republic, August 2006; SOC co-chair and proceedings editor).
- MODEST-6 Conference on 'Modeling Dense Stellar Systems' (Northwestern University, August 2005; main organizer).
- Aspen Winter Conference on 'Planet Formation and Detection' ([Aspen Center for Physics](#), Feb 2005; co-organizer).
- Aspen Winter Conference on 'Binary Radio Pulsars' ([Aspen Center for Physics](#), Jan 2004; co-organizer).
- Co-organized 3 workshops for the NSF Center for Gravitational Wave Physics (at PSU) on 'Making Waves with Intermediate-Mass Black Holes' (May 2004; SOC member);  
'Gravitational Wave Phenomenology' (Nov 2003; SOC member); and  
'Source Simulation and Gravitational Wave Data Analysis' (Oct 2002; SOC member).
- [KITP Conference](#) on 'Globular Clusters: Formation, Evolution and the Role of Compact Objects' (Santa Barbara, Jan 2003; coordinator).
- [Conference on 'Radio Pulsars](#)' (Crete, Aug 2002; SOC member), in honor of [Andrew Lyne](#), [Dick Manchester](#) and [Joe Taylor](#).
- Aspen Center for Physics Programs on 'Physical Applications of Radio Pulsar Timing' (June 1998, main organizer) and 'Compact Objects in Dense Star Clusters' (June 2001; co-organizer).
- Colloquium on 'Stellar Collisions, Mergers, and Their Consequences' (June 2000; American Museum of Natural History, New York, SOC member).

## PROFESSIONAL ORGANIZATIONS

- [American Association for the Advancement of Science](#) (Member).
- [American Astronomical Society](#) (Member).
- [American Physical Society](#) (Fellow).
- [International Astronomical Union](#) (Member).

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