

# Mark C. Wyman

---

## CONTACT INFORMATION

Perimeter Institute for Theoretical Physics  
31 Caroline St. N  
Waterloo, ON, N2L 2Y5  
Canada

*Voice:* (519) 569-7600 x7511  
*Fax:* (519) 569-7611  
*E-mail:* mwyman@perimeterinstitute.ca  
*internet:* www.markewyman.com

---

## EDUCATION

**Cornell University**, Ithaca, New York, USA

Ph.D. Physics. Advisor: Ira Wasserman 2006  
“Cosmic superstrings: Observable remnants of brane inflation.”

**McNeese State University**, Lake Charles, Louisiana USA

B.S. Physics B.S. Mathematics B.A. English Literature 2000

---

## PROFESSIONAL EXPERIENCE

**Postdoctoral fellow** at the Perimeter Institute for Theoretical Physics. 2006 - Present

---

## SELECTED

### HONORS AND AWARDS

NASA Graduate Student Research Fellowship 2005

Cornell Physics Department Boochever Prize Fellowship 2005

National Science Foundation Graduate Research Fellowship 2002

Phi Kappa Phi Graduate Fellowship 2000

McNeese State University, graduated *Summa Cum Laude*, Phi Kappa Phi 2000

---

## SELECTED

### PUBLICATIONS

A. Tolley and M. Wyman, The Gelaton Scenario: Equilateral non-Gaussianity from multi-field dynamics. *Submitted to Physical Review Letters*. arXiv:0910:1853 [hep-th]

J. Khoury and M. Wyman, N-Body Simulations of DGP and Degravitation Theories, *Phys. Rev.* **D80** (2009) 064023, arXiv:0903.1292 [astro-ph.CO]. *15 SPIRES cites*

S.-H. H. Tye, I. Wasserman, and M. Wyman, Scaling of multi-tension cosmic superstring networks, *Phys. Rev.* **D71** (2005) 103508, astro-ph/0503506. **SPIRES TOPCITE**

M. Wyman, L. Pogosian, and I. Wasserman, Bounds on Cosmic Strings from WMAP and SDSS, *Phys. Rev.* **D72** (2005) 023513, astro-ph/0503364. **SPIRES TOPCITE**

L. Pogosian, M. Wyman and I. Wasserman. Observational constraints on cosmic strings, *JCAP* 09 (2004) 008, astro-ph/0403268. **SPIRES TOPCITE**

L. Pogosian, S.-H. H. Tye, I. Wasserman, M. Wyman. Observational Constraints on Cosmic String Production During Brane Inflation. *Phys. Rev.* **D68** (2003) 023506, hep-th/0304188, **SPIRES TOPCITE 100+**

---

## PLANNING AND SERVICE

Referee, National Science Foundation Theory Proposals, *Physical Review D*,  
*Physical Review Letters*, *Journal of Cosmology and Astroparticle Physics*

Chair of IT policy committee, Perimeter Institute. 2009 - Present

International organizer, NIMS-APCTP workshop “String Theory and Cosmology.” 2009

Member of theory working group, CMBPol mission planning team. 2008

Planned workshop *The Astrophysics of Near-Term Cosmological Observations*. PI. 2007

*Mark Wyman - CV* 2/4  
 Cosmology seminar series organizer. Perimeter Institute. 2007 - 2008  
 Session convener, Strings and Branes in Cosmology. Cosmo '07. Brighton, UK. 2007

STUDENTS  
 SUPERVISED

Adam Bognat, Mike Lazarides undergraduate scholarship recipient, University of Waterloo.  
 Supervised summer project and senior research thesis 2009 - Present  
 Andrej Stepanchuk, Perimeter undergraduate research program, from Oxford University.  
 Supervised summer research project 2009

TEACHING

**University of Waterloo / Perimeter Institute**, Waterloo, Ontario, Canada

*Co-head instructor* Fall 2008

Created a new senior-graduate course, "Cosmology and Astrophysics through Problems" with one other postdoc. Course introduced students to modern research topics through classic problems.

**Cornell University**, Ithaca, New York USA

*Part Time Graduate Teaching Assistant* January 2003 - December 2005

Taught advanced undergraduate quantum mechanics, electromagnetism, and high-energy physics for physics majors; conceptual physics for non-science majors; and graduate level cosmology.

*Writing in the Majors Graduate Seminar, Assistant Instructor* August 2002 - November 2002

Seminar designed to aid graduate teaching assistants working in the John S. Knight "Writing in the Majors" program. Duties included leading discussions and contributing to class planning.

*Full Time Graduate Teaching Assistant* August 2000 - May 2002

Taught introductory physics for non-majors and an astronomy majors' sophomore seminar associated with the John. S. Knight "Writing in the Majors" program.

**McNeese State University**, Lake Charles, Louisiana USA

*Undergraduate Teaching Assistant* August 1997 - May 2000

Taught laboratories for introductory physics and remedial mathematics.

CONFERENCE &  
 SUMMER SCHOOL  
 PRESENTATIONS

Contributed talk, "Degravitation: the N-body simulations," Cosmo '09. CERN. 2009  
 Contributed talk, "Cosmic strings looking forward," Challenges in Theoretical Cosmology. Tufts Inst. of Cosmology 20th Anniversary. Talloires, France. 2009  
 Contributed talk, "N-body Simulations of Degravitation and DGP models," Tests of Gravity and Gravitational Physics. Case Western Reserve University. 2009  
 Invited talk, "Stochastic tunneling in DBI inflation," PI / CITA day. 2008  
 Contributed talk, "Cosmic strings on trial." PASCOS '08. Perimeter Institute. 2008  
 Lecture on Large Scale Structure, Summer School on

<i>Mark Wyman - CV</i>	3/4
Particle Physics, Cosmology and Strings, Perimeter Institute.	2007
Contributed talk, "Magnetogenesis," Cosmo '07 Conference. Brighton, UK.	2007
Invited seminar, "Cosmic string limits from WMAP and SDSS," Fundamental strings & cosmic strings. Paris, France.	2005
Presentation, "Binding strings". Third Syracuse-Cornell Meeting.	2005
Poster, "Cosmic strings as gravity wave sources", Pulsar Timing Array Workshop.	2005
Contributed talk, "Limits on cosmic strings from WMAP and SDSS" Cosmo '04 Conference. Toronto, ON, Canada.	2004

---

POPULAR MEDIA

Cosmic 'egg-beaters' may have left magnetic legacy, New Scientist.	September 2007
--	----------------

---

INVITED

PRESENTATIONS

<b>N-body simulations of DGP and Degravitation</b>	
University of Cambridge / DAMTP	2008
Simon Fraser University.	2008
Canadian Institute for Theoretical Astrophysics.	2008
<b>Beyond Vanilla Cosmology</b>	
Physics department colloquium. University of Wisconsin, Milwaukee.	2009
Physics department colloquium. Royal Military College of Canada.	2008
Astronomy department colloquium. Cornell University.	2008
<b>Stochastic Inflation Revisited</b>	
Syracuse University.	2008
University of Pennsylvania.	2007
Princeton University.	2007
University of Delaware.	2007
Columbia University.	2007
<b>Cosmic strings: B-modes, magnetic field generation, and WMAP limits</b>	
University of Pennsylvania.	2009
KICP / Chicago.	2008
Fermilab.	2008
McGill University.	2008
Canadian Institute for Theoretical Astrophysics.	2006
Tufts University.	2006
Perimeter Institute.	2006
Pennsylvania State University.	2005
College of William and Mary.	2004
Cornell University.	2003

## OUTREACH

- 
- Contributor to FQXi popular science blog 2008 - Present
- Keynote presenter, International Summer School for Young Physicists at Perimeter. 2008-2009  
Invited to present two keynote presentations to all participants, describing modern cosmology. Program hosts over 100 talented high school students from around the world interested in pursuing careers in physics.
- Consultant and adviser, public installation and video on cosmology for Canada's SNOLAB. 2009  
Collaboration with other Perimeter scientists and Sudbury National Observatory's outreach team. Work is ongoing
- Consultant and adviser, instructional video on dark matter for high school students. 2007  
Collaboration with Perimeter Institute outreach coordinator Damian Pope. Finished video, with accompanying materials, distributed to high schools across Canada.
- Applied for and co-organized Templeton Foundation Brown Bag Lunch Program on the topic of "Cosmology and Human Purpose." Cornell University. 2005  
Interdisciplinary discussions on how modern cosmological discoveries impact the view of humankind on its place in the universe. Report that I filed following program won \$5000 prize.
- Public Lecture on Cosmology. Hosted by the McNeese Honors College. 2005  
Lecture given on modern cosmology at a popular level; talk was advertised in local newspaper.
- Speaker. Cornell Friends of Astronomy Conference. 2004  
Conference held for members of the public who support the Cornell Astronomy department to inform them about current research in astronomy and astrophysics.
- Presenter. Focus for Teens Workshop. Cornell University. 2002  
Workshop is targeted at high school age children from Cornell's geographical region. Its purpose is to encourage them to study science.

## OTHER

---

**Computation:** C++, FORTRAN, OpenMP, Mathematica

**Languages:** French (intermediate), Korean, Latin (basic)

Piano, pipe organ, choral singing.

## REFERENCES

---

Prof. Ira Wasserman  
ira@astro.cornell.edu  
+1 (607) 255-5867

Prof. Henry Tye  
sht5@cornell.edu  
+1 (607) 255-3360

Prof. Justin Khoury  
jkhoury@sas.upenn.edu  
+1 (215) 573-7152

Prof. Levon Pogosian  
levon@sfu.ca  
+1 (778) 782-7598