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## Laura Matrajt

Department of Applied Mathematics  
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### RESEARCH INTERESTS

Mathematical epidemiology, mathematical models applied to Public Health: both deterministic and stochastic, optimal intervention policies for public health.

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### EDUCATION

**University of Washington**, Seattle, Washington USA

Ph.D. Candidate, Applied Mathematics 2007-present  
(expected graduation date: Summer 2011)

Advisor: Ira M. Longini Jr.

M.S., Applied Mathematics 2009

**University of Washington**, Seattle, Washington USA

M.S., Mathematics 2007

**Universidad Nacional Autonoma de Mexico**, Mexico city, MEXICO

B.A., Mathematics 2005

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### Specialized courses

Summer Institute in Statistics and Modeling of Infectious Diseases June 2009

- Module 4: MCMC Methods for Infectious Disease Studies.
- Module 9: Inference for Graphs and Network Theory in Infectious Diseases.

MITACS-PIMS Summer School on Mathematical Modeling of Infectious Diseases May 2008.

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### TEACHING EXPERIENCE

**University of Washington**, Seattle, Washington USA

*Teaching Assistant*

**2005-2007**

Duties included running discussion sections, proctoring and grading exams, homework assignments, and midterms, as well as organizing review sessions prior to exams.

- MATH 124: Calculus with Analytic Geometry (Fall, Winter, Spring 2005).
- MATH 120: Precalculus (Summer 2005, Fall 2006).
- MATH 111: Algebra with Applications (Winter and Spring 2006).

**Universidad Nacional Autonoma de Mexico**, Mexico city, Mexico

*Teaching Assistant*

**2004-2005**

Duties included running discussion sections, co-teaching lectures, proctoring and grading exams, homeworks and midterms.

- Topology I,
- Topology II,
- Analytic Geometry I.

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PROFESSIONAL  
EXPERIENCE

**Vaccine and Infectious Disease Institute, Fred Hutchinson Cancer Research Center,**  
Seattle, WA

*Research Assistant*

**June 2007 - present**

Supervisors: Dr. Ira Longini and Dr. Betz Halloran.

Research includes the development of mathematical models for interventions and spread of influenza, development of methods in mathematical epidemiology, assessment of current interventions against H1N1 pandemic influenza.

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**Centro de Investigacin en Geografa y Geomtica Ing. Jorge L. Tamayo A.C., Mexico  
city, Mexico**

*Research Assistant*

**2003-2005**

Supervisor: Dr. Carmen Reyes

Duties included development curricula for courses in Graph Theory, teaching assistant in graduate level calculus courses.

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PUBLICATIONS

Basta NE, Halloran ME, **Matrajt L**, Longini IM. Estimating Influenza Vaccine Efficacy From Challenge and Community-based Study Data. *American Journal of Epidemiology*. 2008;168(12):1343-52

Yang Y, Sugimoto JD, Halloran ME, Basta NE, Chao DL, **Matrajt L**, Potter G, Kenah E, Longini Jr. IM. The Transmissibility and Control of Pandemic Influenza A (H1N1) Virus. *Science*. 2009: 729-733.

Basta NE, Chao DL, Halloran ME, **Matrajt L**, Longini Jr. IM. Strategies for Influenza Vaccination of School Children in the US. *American Journal of Epidemiology*. 2009;170: 679-686.

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PAPERS IN  
PREPARATION

**Matrajt L**, Longini Jr. IM. Critical immune and vaccinated fractions for determining multiple epidemic waves, *submitted, in review*.

**Matrajt L**, Longini Jr. IM. One vs. two doses: optimal vaccination strategies for pandemic influenza, *in preparation*.

**Matrajt L**, Longini Jr. IM. Optimizing vaccine allocation at different points in time during an epidemic, *in preparation*.

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CONFERENCE  
PRESENTATIONS  
AND WORKSHOPS

One vs. two doses: optimal vaccination strategies for pandemic influenza. EPIDEMICS conference, Athens, Greece, December 2009.

Variational Principles and Partial Differential Equations, National meeting of the Mexican Mathematical Society, Ensenada, Mexico, October 10-15, 2004.

Mentoring Program for Women in Mathematics, participant, Princeton, NJ, 2002.

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HONORS AND  
AWARDS

Beca para estudios de posgrado en el extranjero 2005-2010  
(Scholarship for Graduate studies abroad) from CONACYT, Mexico.

Reconocimiento por desempeo acadmico 2003  
(Award for outstanding academic performance) UNAM, Mexico.

Beca de movilidad estudiantil 2002  
(scholarship for studying abroad), UNAM, Mexico.  
During this year, I studied at the University of Texas at Austin with this scholarship.

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COMPUTER SKILLS

Languages: Matlab  
Applications:  $\text{\LaTeX}$ .  
Proficient in Maple, Mathematica and Sage.

LANGUAGE  
FACILITIES

Spanish (native), English (fluent), French (fluent).