

Nicole Nova | Curriculum Vitae

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Interests: Ecology and evolution of infectious diseases in wildlife, mathematical modeling, eco-evolutionary dynamics, population genetics, evolutionary game theory, biodiversity, conservation and public health.

Education

STANFORD UNIVERSITY

Ph.D. in Biology (Track: Ecology, Evolution and Population Biology)

Advisor: Erin Mordecai, Ph.D.

Stanford, CA

2016 – present

ROYAL INSTITUTE OF TECHNOLOGY (KTH)

Electrical Engineering

GPA 3.93/4.00

Stockholm, Sweden

2012 – 2013

KAROLINSKA INSTITUTE

D.D.S., M.Sc., B.Sc. in Dental Surgery

Thesis: *Chronic inflammation and pain: Assessment of c-Fos and ATF-3 as markers of spinal neuronal activity in a pain model of rheumatoid arthritis*

Advisors: Per Alstergren, D.D.S., Ph.D., Camilla Svensson, Ph.D.

Award: Erasmus Mundus Scholar - recipient of a stipend for exchange studies at St. Bartholomew's and the Royal London School of Medicine and Dentistry, Queen Mary University, UK (Spring 2011).

Stockholm, Sweden

2007 – 2012

INTERNATIONELLA ENGELSKA GYMNASIET

Diploma in Natural Sciences (Pre-medical track)

GPA 20.0/20.0 + honors 2.5/2.5 - including extended curriculum by 300 credits (2800/2500).

Award: Valedictorian

Stockholm, Sweden

2004 – 2007

Academic Positions

DUKE UNIVERSITY

Associate in Research

Department of Biology, Koelle Research Group.

Working on mathematical modeling of the eco-evolutionary dynamics of HIV and the immune system.

Durham, NC

2015 – 2016

DANA-FARBER CANCER INSTITUTE / HARVARD SCHOOL OF PUBLIC HEALTH

Research Trainee

Department of Biostatistics and Computational Biology, Michor Lab.

Worked on an abstract stochastic population genetics model applied in cancer development.

Boston, MA

2014 – 2015

Research Experience

ROYAL INSTITUTE OF TECHNOLOGY (KTH)

Robotics Programmer

Worked in a team of five KTH students to deliver a functioning hardware/software robot prototype balancing and moving on two wheels.

- Project: *Autonomous Robot Accomplishing Standstill Balance and Forward Motion Using Segway Technology*
- Supervisor: Dr. Cristian Rojas, Automatic Control Laboratory, School of Electrical Engineering.

Stockholm, Sweden

Spring 2013

KAROLINSKA INSTITUTE**Stockholm, Sweden***Research Program in Medical Sciences**Summer 2010*

I was investigating various markers for chronic pain in autoimmune diseases such as rheumatoid arthritis. I performed antibody probing and immunohistochemistry on spinal cord sections from a mouse model.

- Project: *Assessment of c-Fos as a marker of spinal neuronal activity in a pain model of rheumatoid arthritis*
- Supervisor: Dr. Camilla Svensson, Department of Physiology and Pharmacology.

AUSTRALIAN NATIONAL UNIVERSITY (ANU)**Canberra, Australia***National Youth Science Forum (NYSF)**Summer 2008*

Recipient of a scholarship to attend an international science camp, sponsored by the *Australian Rotary Club*.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY (MIT)**Cambridge, MA***Research Science Institute (RSI)**Summer 2007*

Recipient of a scholarship to attend a summer research program for high school students, held at MIT and organized by the Center for Excellence in Education (CEE). I coordinated subject trials and performed data analysis on the performance of spotting threats in airport X-ray luggage screening.

- Project: *What does performance on one visual search task tell you about performance on another?*
- Supervisor: Prof. Jeremy Wolfe, Department of Brain and Cognitive Sciences, Harvard Medical School / Brigham and Women's Hospital.

KAROLINSKA INSTITUTE**Stockholm, Sweden***Research Program in Biomedical Sciences**Summer 2006*

To understand mechanisms driving osteoporosis, I performed standard *in vitro* experiments to study the effect on osteoclasts when activated by the Liver X Receptor gene.

- Project: *Activation of Liver X Receptor affects the function and differentiation of osteoclasts*
- Supervisor: Dr. Kirsten Robertson, Department of Biosciences and Nutrition.

Publications

Nova N, Koelle K. Modeling the development of neutralizing antibody breadth in chronic-stage HIV infection. [In preparation]

Nova N, Ashcroft P, Iwasa Y, Michor F. Stochastic tunneling of three mutations in a population of cancer cells. [In preparation]

Nova N, Alstergren P, Svensson C. Chronic inflammation and pain – assessment of c-Fos and ATF-3 as markers of spinal neuronal activity in a pain model of rheumatoid arthritis. Master's thesis, Karolinska Institute, June 2012. Access: edu.ofa.ki.se/examensarbete/detail.asp?Id=343

Van Wert M, Nova N, Horowitz T, Wolfe J. What does performance on one visual search task tell you about performance on another? *Journal of Vision*. 2008;8(6):312.

Awards & Scholarships

2013: Google Grant – *Women in Tech Conference and Travel Grant*

2011: *Erasmus Mundus Scholarship* – An EU grant for university studies in Europe.

2008: *Australian Rotary Club Scholarship* – to attend National Youth Science Forum science camp at ANU.

2007: First Prize in the Swedish National Science Fair – *Knut and Alice Wallenbergs Scholarship* to attend Research Science Institute at MIT.

Talks & Conferences

Epidemics - Fifth International Conference on Infectious Disease Dynamics
HILTON CLEARWATER BEACH

Clearwater, FL
Dec 1 - 4, 2015

- Triangle Center for Evolutionary Medicine Symposium** **Durham, NC**
 THE SOLUTION CENTER IN RESEARCH TRIANGLE PARK *Nov 17 - 18, 2015*
Poster presentation. Title: *Modeling the development of neutralizing antibody breadth in chronic-stage HIV infection*
- 30th Jubilee Symposium of Research Program in Biomedicine** **Stockholm, Sweden**
 KAROLINSKA INSTITUTE *June 8, 2015*
Invited speaker. Title of talk: *Mathematical Modeling in the Biosciences*
- REU Summer Program in Mathematical Biology** **Greensboro, NC**
 UNIVERSITY OF NORTH CAROLINA AT GREENSBORO (UNCG) *June 2, 2015*
Invited speaker. Title of talk: *Mathematical Modeling of Cancer and Infectious Diseases*
- Ecology & Evolution of Infectious Diseases (EEID) Conference** **Athens, GA**
 UNIVERSITY OF GEORGIA *May 26 - 29, 2015*
- Mathematical Biosciences Institute – Evolutionary Game Theory Conference** **Columbus, OH**
 OHIO STATE UNIVERSITY *April 26 - May 1, 2015*
- Mathematical Biology Colloquium** **Durham, NC**
 DUKE UNIVERSITY *Spring 2015 – present*
 Attending a journal club with weekly seminar series with guest speakers from various universities.
- EuroBSDcon 2013 Conference** **St. Julian's, Malta**
Google Women in Tech Scholar *Sep 26 - 29, 2013*
- Research in Medical Sciences Symposium** **Stockholm, Sweden**
 KAROLINSKA INSTITUTE *Aug 25 - 26, 2010*
Poster presentation. Title: *Assessment of c-Fos as a marker of spinal neuronal activity in a pain model of rheumatoid arthritis*

Work

- Research Science Institute (RSI)** **Cambridge, MA**
Director *2016 – present*
 Summer research program for domestic and international high school students, co-sponsored by MIT and the Center for Excellence in Education (CEE).
- Research Academy for Young Scientists (RAYS)** **Strängnäs, Sweden**
Committee Member, Mentorship Director, Speaker *2011 – 2013*
 Helped found and run a prestigious research program for high school students in Sweden.
- EDSA Research Program** **Dublin, Ireland**
Co-founder *2010 – 2011*
 President and co-founder of a research program for dental students in Europe, supported by the European Dental Students' Association (EDSA).
- MEDICAL UNIVERSITY OF VIENNA** **Vienna, Austria**
Surgical Assistant *Summer 2010*
 Admitted to a four week medical program to assist physicians/surgeons at the General Hospital (AKH). Organized by the International Federation of Medical Students' Association (IFMSA).
 - Department of Cranio-, Maxillofacial and Oral Surgery, General Hospital (AKH).
 - Supervisor: Prof. Dr. Dr. Rolf Ewers.