

Nicole Nova | Curriculum Vitae

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Nationality: Swedish, U.S. permanent resident

Interests: Mathematical & empirical modeling in ecology and evolutionary biology, population genetics, eco-evolutionary dynamics, evolutionary medicine

Academic Positions

DUKE UNIVERSITY

Durham, NC

Associate in Research

2015 – present

Department of Biology, Koelle Research Group.

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

DANA-FARBER CANCER INSTITUTE / HARVARD SCHOOL OF PUBLIC HEALTH

Boston, MA

Research Trainee

2014 – 2015

Department of Biostatistics and Computational Biology, Michor Lab.

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

Education

ROYAL INSTITUTE OF TECHNOLOGY (KTH)

Stockholm, Sweden

Electrical Engineering

2012 – 2013

GPA 3.93/4.00

KAROLINSKA INSTITUTE

Stockholm, Sweden

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

2007 – 2012

- 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: Dr. Per Alstergren, Dr. Camilla Svensson

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).

INTERNATIONELLA ENGELSKA GYMNASIET

Stockholm, Sweden

Diploma in Natural Sciences (Pre-medical track)

2004 – 2007

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

Award: Valedictorian

Research Experience

ROYAL INSTITUTE OF TECHNOLOGY (KTH)

Stockholm, Sweden

Robotics Programmer

Spring 2013

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.

KAROLINSKA INSTITUTET

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)*National Youth Science Forum (NYSF)*Recipient of a scholarship to attend an international science camp, sponsored by the *Australian Rotary Club*.**Canberra, Australia***Summer 2008***MASSACHUSETTS INSTITUTE OF TECHNOLOGY (MIT)***Research Science Institute (RSI)*

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.

Cambridge, MA*Summer 2007***KAROLINSKA INSTITUTET***Research Program in Biomedical Sciences*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.

Stockholm, Sweden*Summer 2006***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 Institutet, 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**

THE SOLUTION CENTER IN RESEARCH TRIANGLE PARK

Durham, NC*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

KAROLINSKA INSTITUTET

Invited speaker. Title of talk: *Mathematical Modeling in the Biosciences***Stockholm, Sweden**

June 8, 2015

REU Summer Program in Mathematical Biology

UNIVERSITY OF NORTH CAROLINA AT GREENSBORO (UNCG)

Invited speaker. Title of talk: *Mathematical Modeling of Cancer and Infectious Diseases***Greensboro, NC**

June 2, 2015

Ecology & Evolution of Infectious Diseases (EEID) Conference

UNIVERSITY OF GEORGIA

Athens, GA

May 26 - 29, 2015

Mathematical Biosciences Institute – Evolutionary Game Theory Conference

OHIO STATE UNIVERSITY

Columbus, OH

April 26 - May 1, 2015

Mathematical Biology Colloquium

DUKE UNIVERSITY

Attending a journal club with weekly seminar series with guest speakers from various universities.

Durham, NC

Spring 2015 – present

EuroBSDcon 2013 Conference

Google Women in Tech Scholar

St. Julian's, Malta

Sep 26 - 29, 2013

Research in Medical Sciences Symposium

KAROLINSKA INSTITUTET

Poster presentation. Title: *Assessment of c-Fos as a marker of spinal neuronal activity in a pain model of rheumatoid arthritis***Stockholm, Sweden**

Aug 25 - 26, 2010

Work**Research Academy for Young Scientists (RAYS)**

Committee Member, Mentorship Director, Speaker

Helped found and run a prestigious research program for high school students in Sweden.

Strängnäs, Sweden

2011 – 2013

EDSA Research Program

Co-founder

President and co-founder of a research program for dental students in Europe, supported by the European Dental Students' Association (EDSA).

Dublin, Ireland

2010 – 2011

MEDICAL UNIVERSITY OF VIENNA

Surgical Assistant

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.

Vienna, Austria

Summer 2010

Computer Skills**Advanced:** PYTHON, HTML/CSS/JS, L^AT_EX, Gimp**Intermediate:** MATLAB, C, C++, MATHEMATICA, Prism, Blender, ImageJ**Basic:** JAVA, R, DJANGO, NODE.JS, BSD

Languages**Proficient:** Swedish, English, Czech, Polish

Native Proficiency

Intermediate: Spanish

Conversational