

Curriculum Vita
Alexandros Sotasakis

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Degrees/Titles

- ETP** (Excellent Teaching Practitioner), May 2012, LTH, Lund University.
- Ph.D.** Mathematics, May 2000, Texas A&M University, College Station, TX
Adviser: Paul Nelson. (please see attached document verifying "PhD degree")
Title: "Developments in the Theory of the Prigogine-Herman Kinetic Equation of Vehicular Traffic"
- M.A.** Mathematics, Aug. 1993, Texas A&M Univ.
- B.S.** Applied Mathematics, Aug. 1991, Texas A&M Univ.

Working Experience

Lund University, LTH	Associate Professor	[Aug. 2011-currently]
Univ. of North Carolina at Charlotte	Assistant Professor	[Sept.2007-Aug.2011]
University of Massachusetts	Visiting Assistant Professor	[Sept.2003-Aug.2007]
Courant Institute, New York Univ.	Associate Research Scientist	[Sept. 2002-Aug. 2003]
Univ. of Calif. at Berkeley	Research Fellow	[Jan. 2002-May 2002]
Georgia Inst. of Technology	Vis. Assistant Professor	[Sept. 2001-Aug. 2002]
Chalmers Inst., Sweden	Post Doctoral Research	[Jan. 2000-June 2001]

Publications in peer reviewed journals: 20. H-index=i10-index=9, total citations 219.
Latest publication to appear in Sept. 2012 in Comm. Comp. Phys. (impact factor: 2,33)

Patents

- US Patent #61/601,048. Patent Pending
- Sweden Patent #SE1200144-3. Patent Pending

Awards/Grants

Grants as main and only PI:

- Sabbatical award after competition within the College of Arts and Sciences, UNCC, 2010.
- Bio-Techonology research, College of Arts and Science, UNCC 2009-2010: \$5,000
- Faculty Research Grant (FRG) from Univ. of North Carolina, May-June 2008: \$6,000
- NSF¹ DMS: National Science Foundation Grant, (2008-2010): \$92,923
- NSF DMS: National Science Foundation Grant, (2006-2008): \$41,680
- Commonwealth College fellowship²: awarded funding for research assistant, 2007.
- Commonwealth College fellowship: awarded funding for research assistant, 2006.

¹ NSF DMS: National Science Foundation, Directorate of Mathematical Sciences, USA

² State of Massachusetts Research Foundation, USA

Grants supported by (not main PI)

E-Science project in detection of vortex cores, with fluid mechanics at LTH, 2012-currently.
Department of Energy, USA: Research in Cancer Development. 2006-2007 \$1,120,747
TMR Network: European Union funded post-doc at Chalmers, Sweden, 2000-2001

Supervision of graduate students

- Vivianne Holmen, (supervisor, 2012-currently), graduate fluid mech., LTH.
- Melissa Lowel (co-supervisor, 2008-2010), graduate in biology at UNCC.
- Hiral Vora, (supervisor, 2008-2009), graduate in computer science at UNCC.
- Wu Li, (supervisor, 2008-2009), graduate student in math at UNCC.
- Are Sasanka, (co-supervisor, 2006-2007) PhD in mathematics at UMass, Dec. 2007.
Employed in Wall Street.
- Niamph Dundon, (supervisor, 2004-2005) graduate in math. at UMass, Aug. 2005,
See **publication [1]** in the Appendix included below. Employed by Matlab.

Supervision of undergraduate students

- Nicole Solomon, (supervisor, 2009-2010), math at UNCC.
- Liang Xu, (supervisor, 2009-2010), math at UNCC.
- Dana Level, math. (2007-2009).
- Natalie Penley, math. (2007-2009).
- Timur Alperovich, computer science at UMass, (2005-2007).
See **publication [2]** in the Appendix included below.

Research policy assignments and membership in scientific societies

- Panelist for the NSF, Focused Research Group Program, deciding and ranking all proposals to be funded under this program for 2009.
Average proposal size \$1 million. Washington DC, Nov. 8-11, 2009.
- Panelist for NSF, Applied Partial Differential equations board, deciding and ranking all proposals to be funded under this program for 2008.
Average proposal size \$150,000.00, Washington DC, March 22-23, 2008.
- Grant proposal reviewer for National Science Scholars Program (NSS) and the U.S Civilian Research and Development Foundation (CRDF). Fall, 2007.

Academic leadership and administrative appointments

- Co-founder and co-organizer of Applied and Computational Math. Seminar at UNCC (dept. size=64, group size=2). I co-founded this seminar together with Assist. Prof. Catalin Turk at UNCC. Since Prof. Turk and myself took the initiative to start this seminar on our own funds were not yet available, for the first year, to the extend they should be so I have been financing speakers expenses from personal funds as well as my NSF grant.
Please check out the seminar web page which I maintain for this seminar with all this and up todate information at: <http://www.math.uncc.edu/~asopasak/>

- Participation in the following committees at the Math. & Stat. Dept (size = 64) at UNCC:

Faculty Hiring	Colloquium Seminar	PUTNAM Exam	Computer Advisory	Graduate Curriculum	Computer Advisory
2008-2009, group size=5	2008-2009, group size=4	2008-2009, group size=2	2008-2009, group size=6	2007-2008, group size=7	2007-2008, group size=7

- Participation in the qualifying exam committee for PhD students at UMass in Fall 2006. (My participation in this task was by invitation. Normally visiting faculty does not participate in committees). (dept size=49, group size=3)
- Participation in the qualifying exam committee for PhD students at UNCC since 2009.
- Chair and coordinator of all teaching as well as common **exams** for all classes of Ordinary Differential Equations courses at the Math. & Stat. Dept. at UMass during Fall 2005. Again, this is unusual for a visiting faculty but the department felt that I was amply qualified.

Extramural scientific activities and assignments

- Symposium organizer within ECMI 25 at LTH, Lund University, July, 2012.
- Chair for the annual SIAM-ICIAM meeting, Charlotte, NC, February 2011. web page: http://math.uncc.edu/~asopasak/siam-seas2011/Main_Page.html
- At UNCC, I represented the college of arts and sciences at Mallard Creek (2008) and Al Brown (2009) high schools in an audience of graduating seniors in an effort to interest student to a possible career in science.
- Book reviewer: Title “A first course in mathematical modeling” 3e by Giordano, Weir and Fox, Dec. 9, 2005, Brooks/Cole publishers.
- Session chair for IPAM workshop on “Mathematics of Subgrid-Scale Phenomena in Atmospheric and Oceanic Flows”, Jan. 28-Feb. 2 2002, UCLA
- SIAM mini-symposium co-organizer (with P. Nelson) July 2001, San Diego, CA.
- Permanent reviewer for American Mathematical Society (AMS) . 6 reviews/year
- Referee for journals: SIAM Journal on Applied Mathematics, referee for Transportation Research Board Annual Meeting at Wash. DC, Journal of Transportation Res. B, Journal Comm. Math. Sci., Applied and Computational Mathematics.

Teaching Section of CV

Teaching Experience: total 40 courses.

- 26 courses as primary instructor
- 9 courses as teaching assistant (5 of those courses involved full lectures)
- 5 courses as main computer laboratory instructor

Teaching Diversification and Media of Exposition

- 3 countries: USA, Canada, Sweden.

- 6 universities: Texas A&M University, Georgia Institute of Technology, Univ. of Massachusetts, Univ. of North Carolina, Univ. of Victoria, Lund University.
- Internet based teaching software: WebCT/Blackboard, Moodle, Ustream.
- Expository media and dissemination methods used: chock-board, overhead, computers, internet, webpage, online self-graded quizzes, pod/web-casts, email.

Teaching Education

- 2012 7th Pedagogic Inspiration Conference, 29-31 Aug. at LTH.
- 2012 Docent course which includes graduate student supervision at LTH.
- 2011 Excellent Teaching Practitioner (ETP) course at LTH, Lund University.
- 2009 teaching methodologies seminar in under-represented school districts, Univ. of North Carolina.
- 2008 mini-course on teaching via e-media and in particular Moodle and Ustream, Univ. on North Carolina.
- 2007 mini-course in incorporating technology in the classroom, Univ. of North Carolina.
- 1996 Maple conference at Texas A&M University.
- 1995 mini-course in teaching with technology at Texas A&M University.
- 1993 one semester (4 months) course in teaching methods and practice by professor Al Boggess, Texas A&M University.
- 1992 one semester (4 months) course in teaching methods and practice by professor Michael Stecher, Texas A&M University.

Development of teaching material (all material can be provided on request)

- At LTH, I developed class notes and projects available on line for the Numerical Analysis students in Spring 2012.
- At the Univ. of Massachusetts I created 2 web-based instructional textbooks (lectures accompanied by relevant numerical simulations) which were available to:
 - a) my Math Modeling students during the Spring 2005 and Spring 2006 and
 - b) my Numerical Analysis students during the Fall 2004.
- Similarly during the Fall 2007 at the Univ. of North Carolina at Charlotte I created all web based material (lectures, self-grading exams, self-grading quizzes, illustrations) using Blackboard (a WebCT version) on the internet for a statistics class. The class was completely taught on the internet and I never saw my students since their locations were scattered around the United States. Everything was provided on-line except the final exam. The final exam which I designed was distributed at local universities for each student and was taken under proctor supervision.
- More recently I used Moodle and UStream to teach both my Fall 2009 classes in person, and online. Every single lecture was recorded live and available for download afterwards on our Moodle class web page. Furthermore I taught 3 classes online live (not in class) from a long distance with two-way audio video capability. Students were questioned later in regards to the overall experience and all feedback was quite positive.

Pedagogic leadership and development

- Organized a university-wide teaching lecture The Bonnie E. Cone Lecture on Teaching Mathematics and invited Prof. Peter Orzag who discussed “The Role of Experimental and Computational Mathematics in the Teaching of Mathematics”, Oct. 30, 2009.
- I voluntarily represented the college of arts and sciences at Mallard Creek (2008) and Al Brown (2009) high schools in an effort to interest graduating high school students to a career in science, Univ. of North Carolina
- At UNCC, I provided an official review which included critique and suggestions for teaching improvement of Ms Alina Reznikova, a senior lecturer, in the department of Math. and Statistics during the Fall 2007. This review was essential towards advancement of Ms. Reznikova in the department.
- I officially supervised lecturers Miss Lipika Ghosh in the Fall of 2007 and Miss Mei Li in the Fall of 2009 at the dept. of Mathematics and Statistics at UNCC towards improving their teaching abilities. To this end we arranged visits during their teaching so that I, as an observer, would be able to evaluate and provide constructive critique of their teaching. Before each classroom visit I provided suggestions during a pre-class discussion. After each class feedback was immediately provided and similar written suggestions were also send via email later on. Overall I wrote official reports which helped both Miss Ghosh and Miss Li in improving their teaching ability and learning impact to the students.
- Chair and coordinator of all teaching and common exams for all (4) classes of Ordinary Differential Equations courses at the Math. & Stat. Dept. at UMass during Fall 2005. Again, this is unusual for a visiting faculty but the department felt that I was amply qualified.
- Book reviewer: Title “A first course in mathematical modeling” 3e by Giordano, Weir and Fox, Dec. 9, 2005, Brooks/Cole publishers.

Graduate and Advanced Student Teaching

- Graduate student and postdoctoral teaching. Univ. of Victoria, Canada. July 14-18 2008, **3 Invited Summer-school Lectures** on “Monte Carlo Simulations and Numerical Methods for stochastic differential equations” in program “Stochastic & Probabilistic Methods in Ocean-Atmosphere Dynamics”. I created these lectures with respective homework assignments for graduate students and postdoctoral participants to that workshop.
- University of Delaware, Web-casted Mini-course, Multiscale modeling and simulation of Hybrid (deterministic-stochastic) systems. URL: http://www.che.udel.edu/ccst/Dion_Short_Course/Short_Course.html, February 2006. Participants range from graduate students to postdoctoral students to other researchers and colleagues.

Teaching References on Request

At Univ. of North Carolina, department head Prof. Alan Dow
email: adow@uncc.edu, Tel: +1-704-687-4560
From UNCC, associate chair & teaching operations, Prof. Kazemi Mohammad
email: mkazemi@uncc.edu, Tel +1-704-687-4578
At the Univ. of Massachusetts, the department head was Prof. Bruce Turkington,
email: turk@math.umass.edu, Tel: +1-413-454-4771
From UMass: (also attached here), Prof. George Avrunin, Associate Dept. Head,
email: avrunin@math.umass.edu, Tel: +1-413-545-0510,
From UMass: Arlin Norkin, Director of Administration and Staff,
email: norkin@math.umass.edu, Tel:+1-413-545-2762

Evaluations of scientific & other qualifications attached as testimonials:

- a) Recent official document from Department head, Prof. Alan Dow, to the Dean at UNCC which supports my formal re-appointment at the dept. until tenure in 2011 (see attached).
- b) Recent official document from Dept. head at UNCC, Prof. Alan Dow, which evaluates my overall performance since first hired in 2007 (see attached).
- c) Recent official document from departmental committee which evaluates my overall performance since first hired at UNCC in 2007 (see attached).
- d) Official document “Annual faculty report” from Univ. of Massachusetts signed by Dept. Head Prof. Turkington (see attached).
- e) Several student evaluations from University of North Carolina (UNCC) are attached.
- f) Several student evaluations from University of Massachusetts are also attached.
- g) Also found several online student evaluations of my teaching at Rate My Professors web site: For 3 years and different classes at the Univ. of Massachusetts at <http://www.ratemyprofessors.com/ShowRatings.jsp?tid=537135&page=1>
For 3 years and different classes at the University of North Carolina at <http://www.ratemyprofessors.com/ShowRatings.jsp?tid=1065156&page=1>

Appendix1 . Publications with graduate & undergraduate students:

- [1] Niamph Dundon and Alexandros Sopasakis, 2007, pp. 661-689, *Transportation and Traffic Theory*, Eds. Allsop, Bell and Heydecker, London, Elsevier. Miss Dundon was my graduate student.
- [2] T. Alperovich and A.Sopasakis, Stochastic dynamics modeling of traffic, *J.Stat.Phys*, 133: 1083-1105, (2008). Timur Alperovich was my undergraduate student.

Appendix 2. Invited lectures (all expenses paid invitations listed only)

1. **Invited speaker** for ISTTT 20. This is the premier transportation and traffic bi-annual international conference. (passed the first and hardest stage- April 2012- of a very demanding peer review process which leads to a high impact publication within the field of transportation). to occur July 2013.
2. **Invited speaker** for NSF supported meeting on traffic prediction, measurement and infrastructure, University of California at Los Angeles, Dec. 7-9, 2011.
3. **Invited speaker** and participant for NSF Focused Research Group, March 2-5, 2009, Univ. of Maryland, College Park.
4. Texas A&M, dept. of math., **invited speaker**, Nov. 2008.
5. Univ. of Texas, dept. of math., **invited speaker**, Nov. 2008.
6. Univ. of Victoria & PIMS, Canada. July 21-23 2008, **invited speaker** in workshop on "Stochastic and probabilistic methods for atmosphere, ocean and climate dynamics"
7. Univ. of Victoria & PIMS, Canada. July 14-18 2008, delivered **3 invited workshop lectures** on "Monte Carlo Simulations and Numerical Methods for stochastic differential equations" in the summer school "Stochastic & Probabilistic Methods in Ocean-Atmosphere Dynamics"
8. American Institute of Mathematical Sciences (AIMS) meeting, **Invited Contribution**, Arlington, TX, May 18-21, 2008.
9. Representing the College of Arts and Sciences at UNCC at Mallard Creek high school, **Invited Talk**, to the graduating class related to careers in science, May 15, 2008.
10. SIAM conference on analysis of partial differential equations, Costa Mesa, AZ, Dec. 10-12, 2007. **Invited speaker** to mini-symposium on Kinetic theory and interacting particle systems, Title "Treatment of multi-scale hybrid deterministic/stochastic coupled systems".
11. Imperial College London, **Invited lecture**, July 23-25, 2007, "Stochastic modeling and simulation of multi-lane traffic".
12. Univ. of Sussex, **Invited seminar speaker**, Mar. 6-10 2007, "Multi-scale modeling for deterministic/stochastic systems", Sussex, UK.
13. Univ. of North Carolina, **Invited seminar speaker**, Feb. 27-Mar. 1, 2007, "Closures for coupled systems with both deterministic and stochastic pieces", Charlotte, NC.
14. Florida International University, **Invited seminar speaker**, Feb. 11-13, 2007, "Analysis and numerical simulations for stochastic-deterministic systems", Miami, FL.
15. Univ. of Akron, **Invited seminar speaker**, Feb 6-8, 2007, "Closures and numerical solutions for multi-scale systems", Akron, OH.
16. Oklahoma State Univ., **Invited seminar speaker**, Jan 28-30, 2007, "Multi-scale closures for deterministic/stochastic coupled systems", Stillwater, OK.
17. Brown University, Dept. of Math., **Invited seminar speaker**, Oct. 13 2006, "Multiscale modeling and simulations for deterministic/stochastic coupled systems", Providence, RI.
18. Florida State University, **Invited Speaker**, workshop Numerics for Stochastic Differential Equations with Applications, Feb. 26-March 2, 2006, Tallahassee, Florida.
19. University of Delaware, **Web-casted Mini-course Invited workshop speaker**, Multiscale modeling and simulation of Hybrid (deterministic-stochastic) systems. URL: http://www.che.udel.edu/ccst/Dion_Short_Course/Short_Course.html, February 2006

20. Technical University of Dresden, **Invited colloquium speaker**, Jan. 6-10, 2006. Title: "Stochastic Traffic Flow Modeling", Dresden, Germany.
21. University of Crete, Greece, Dec 7-12, 2005. **Invited colloquium speaker**. Title: "Multiscale modeling and simulation of hybrid (deterministic-stochastic) systems", Chania, Greece.
22. University of New Orleans. **Invited colloquium speaker**. April 2003. Title: "Formal Asymptotic models of vehicular traffic", New Orleans, LA.