

## CURRICULUM VITAE: **DARKO SARENAC**

### **ADDRESS**

DEPARTMENT OF PHILOSOPHY  
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<http://lamar.colostate.edu/~darko/>

### **ROCKY MOUNTAIN CoCoLoIDS GROUP at CSU**

<http://www.colostate.edu/Depts/Philosophy/CoCoLoIDS/>

### **EDUCATION**

2006	Ph.D., Stanford University.
2000	M.A., Simon Fraser University.
1998	B.A. Honours, Simon Fraser University.

### **ACADEMIC POSITIONS**

(Fall, 2007-present) Assistant Professor, Philosophy, Colorado State University

### **OTHER POSITIONS**

(2004-2007) Postdoctoral Fellow, Stanford University, Palo Alto, CA

### **CURRENT JOB DESCRIPTION**

50% Teaching 40% Research/Creative Activity 10% Service

### **AREA OF SPECIALIZATION**

Philosophical Logic, Mathematical Logic, Philosophy of Logic

### **AREA OF COMPETENCE**

Philosophy of Mathematics, Ancient and Medieval Philosophy, Philosophy of Mind, Agent Based Modeling Systems in Philosophy, Cognitive Science, and A.I., Nietzsche, General Humanities, Teaching in Philosophy

**PUBLISHED WORKS**

**Refereed Journal Articles:**

"Modal Logics for Products of Topologies" *Studia Logica*. (2006) With van Benthem, Johan, Bezhanishvili, Guram, and ten Cate, Balder.

"Cardinal spaces and topological representations of bimodal logics." *Logic Journal of IGPL*. (2005) With Loewe, Benedik.

"Completeness of an indexed epsilon-calculus." *Archive for Mathematical Logic*. (2003) With Mints, G.M.

"The Preservation of Relevance". *Eidos*, (2003) With Jennings, R.E.

"Revisiting the completeness of the  $K_n$  axiomatization for the modal logics of  $(n+1)$ -ary relational frames: A new proof." *Logic Journal of the IGPL*. (1999) With Jennings, R.E. and Nicholson, Tara.

**Refereed Chapters in Books**

"The Geometry of Knowledge". *Trends in universal logic*. J-Y. Béziau, A. Costa-Leite & A. Facchini, eds. Institute of Logic, University of Neuchatel - Switzerland. (2003) With van Benthem, Johan.

"Preservation of Truth," *Truth and Probability*, Bryson Brown, and Francois Lepage, eds. (2003) With Jennings, R.E.

"Beyond Truth(--preservation)". In *Paraconsistency, The Logical Way to the Inconsistent*, Walter Carnielli ; Marcelo Esteban Coniglio ; Itala Maria Loffredo D'Ottaviano eds. Marcel Dekker, New York, (2002). With Jennings, R.E.

"The Preservation of Meta-Valuational Properties and the Meta-Valuational Properties of Implication." In *Logical Consequence: Rival Approaches and New Studies in Exact Philosophy, Logic, Mathematics and Science (Vol I)*. Hermes Science Publishers, Oxford. (1999) With Jennings R.E.

"A new completeness proof for the  $K_n$  modal logics." In *Logical Consequence: Rival Approaches and New Studies in Exact Philosophy, Logic, Mathematics and Science (Vol I)*. Hermes Science Publishers, Oxford. (1999) With Jennings, R.E. and Nicholson, Tara.

**Refereed Proceedings/Transactions:**

"Nietzsche on Perspectivism and Paradox Tolerance", *Proceedings of Stanford-Berkeley annual GSC*, Stanford, CA. (2003)

"Paraconsistency, Implication, and Truth." *Proceedings of The International Conference on Artificial Intelligence*, Las Vegas, NV, June, 25-29, 2001. With Jennings, R.E.

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### **Papers Under Review**

"Modal Logic for Qualitative Dynamics" Submitted as a part of a special issue on Dynamic Logic (Synthese).

"Topological Compass Logic," (Submitted August 2009)

"Fractal Completeness Techniques in Topological Modal Logic," (submitted October 2009) With Tamar Lando.

"Sierpinski Carpet, Menger Sponge, and Modal Topological Semantics," (Submitted November 2009) With Tamar Lando.

### **In Preparation**

"Kuhn and the Agent Based Models of Science," with M. Weisberg, M. Eland, and B. Harrison. (Late 2009)

"Optimizing Cost in a Mid-Sized Scientific Enterprise: Hard Work vs. Creativity " with M. Eland et al. (Early 2010)

"The Value of Student-Adviser Cooperative Behavior in Agent Based Model of Scientific Research," with Mike Eland, et al. (papers above plus several others in preparation based on our program "Mavericks Followers and the Collaboration in Science.") (Early 2010)

"Anti-Cooperative Games and the Dynamics of the Division of Cognitive Labor," with John Dunn et al. (Based on ABMS program: Anti-Collaboration Games and the Division of Cognitive Labor.) (2010)

"Dynamics of Social and Ethical Interaction," with Josh Shepherd. (2010)

"The Logic of Dynamic Positivism: On Making Knowledge Public," (longer term comprehensive project on the dynamics of science, knowledge, and language, possibly a book length work) (Near future)

"The system of natural seduction: A logic of expectation and compromise," (several directions in the works) (Near future)

"Topological Semantics, Fractal Interpretation and Some Stronger Modal Languages," with Tamar Lando et al. (Using fractal techniques to address some open problems in topological modal semantics and dynamical logic) (2010/2011)

"Qualitative Dynamical Logic, Part II," extending the results of "Modal Logic for Qualitative Dynamics" and fulfilling some promises made in that paper. (2010/2011)

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### **COMPUTATIONAL MODELS (COMPUTER PROGRAMS)**

Modeling epistemic significance, discovery, and the division of cognitive labor. Two simulation models in Agent Based Modeling (ABM) paradigm:

- Mavericks Followers and the Collaboration in Science
- Anti-Collaboration Games and the Division of Cognitive Labor.

Both programs are written in the language NetLogo. The following students have collaborated on these projects: Mike Eland, John Dunn, and Ben Harrison. We were inspired by and continue to work closely with Michael Weisberg and at The University of Pennsylvania. The programs can be found at the website of Rocky Mountain CoCoLoIDS Group at CSU: <http://www.colostate.edu/Depts/Philosophy/CoCoLoIDS/>

### **PROFESSIONAL AFFILIATIONS AND ACTIVITIES**

Association for Symbolic Logic

American Philosophical Association

Society for Exact Philosophy

A founding member of **Laboratory for Logic and Experimental Philosophy** at Simon Fraser University

A Founding Member and Director of Research: Rocky Mountain **Communication, Collaboration, and Logic In Dynamical Systems** Group at CSU

### **REFEREED PAPERS THE FOR FOLLOWING JOURNALS/INSITUTIONS**

*The Journal of Philosophical Logic*

*Synthese*

*The Journal of Information and Computation*

National Science Foundation

Springer Volume: Logic of Space Handbook

### **HONORS AND AWARDS**

The Institute for Learning and Teaching (CSU) TILT award for course improvement with the maximal financial reward, 2007.

Stanford Graduate Student Fellowship, 2000-2005.

Social Sciences and Humanities Research Council of Canada Fellowship (SSHRC) 2000-04.

Mellon Summer Fellowship, Summer 2000, 2001.

Undergraduate Open Scholarship, Simon Fraser University, 1996-98.

**PAPERS PRESENTED/SYMPOSIA/INVITED**  
**LECTURES/PROFESSIONAL MEETINGS/WORKSHOPS**

**Invited Talks, Lectures, and Tutorials**

**Colloquia**

"Fractal Techniques in Topological Semantics for Modal Languages," Penn Logic and Computation Seminar, The University of Pennsylvania, Philadelphia, PA, September, 2009.

*"Fractals as a panacea of Spatial Reasoning," Cognitive Science Colloquium at Noon, the Institute for Research in Cognitive Science. The University of Pennsylvania, Philadelphia, PA, September 2009.*

*"On Whether We Should Replace Euclid with Mandelbrot," a general audience talk given in the Philosophy Department as a Guest of the Humanities Center at CSU, Chico. California State University at Chico, Chico, CA, October 2009.*

"Topological interpretation of S4 and some Extensions," Logic Tea, ILLC, Amsterdam, NL, November, 2003.

"Modal logics for product topologies II," the seminar of *Computational Logic Laboratory*, Computer Science Department, Simon Fraser University, Burnaby, BC, May 2003.

**Invited Conference Talks**

*"Is S4 Complete over the Coast of Britain?" at Spatial Relations: An Interdisciplinary Perspective, (an Invitation Only Multidisciplinary Conference on Spatial Reasoning in Cognitive Science), CSLI, Stanford University, Stanford, CA, March 2009.*

*"Completeness of S4 for the Real Line and Koch Fractal," a special mini-session on Spatial Formalisms, Workshop on Logic, Communication, and Agency, CSLI, Stanford University, Stanford, CA, June 2009.*

"Logic of Dynamic Positivism," Workshop on Dynamic Logic. UQAM, Montreal, Qc., May 2007

"What does it mean to preserve a property? " LLEP International Conference, Dalhousie University, Halifax, NS, July 2006.

**Invited Tutorials (Mini-Classes)**

*Universal Uses of Relational (Kripke) Structures, 1st World Congress and School on Universal Logic, Montreux, Switzerland, March 2005.*

**General Talks and Conference Papers**

(2009) "Dynamical Logics and Dynamical Systems, a General Framework", Logical Dynamics Workshop, Philosophy Department, Stanford University, Stanford, CA.

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(2008) "The logic of dynamic positivism: On making knowledge public." Annual SEP Meeting, University of Wyoming, Laramie, WY.

(2007) "Dynamics of Communication," Annual SEP Meeting, UBC, Vancouver, BC.

(2004) "Logic of urban warfare: reasoning about invasions and safety on grids", Dynamic Logic Workshop, ILLC, Amsterdam.

(2004) "Topological logics on product spaces," Stanford Logic Seminar, Stanford, CA.

With Girard, Patrick. (2004) "Preservationism meets modal logic; a property based approach to modal logic, " Logical methods in the humanities workshop, Stanford University, Stanford, CA.

With ten Cate, Balder. (2003) "Products of Hybrid Logics," HyLo-V, ILLC, Amsterdam.

(2003) "Modal logic, topology and space," International Workshop on Universal Logic, Neuchâtel, Switzerland.

(2003) "Preservation of Relevance," 3rd World Congress on Paraconsistency, Toulouse, France.

(2003) "Modal logics for product topologies," Annual SEP Meeting, SFU, Vancouver, BC.

(2003) "Nietzsche on Perspectivism and Paradox Tolerance", Stanford-Berkeley annual graduate student conference, Stanford, CA.

With Mints, G.M. (2002) "Completeness of an indexed epsilon-calculus". ASL 2002 Annual Meeting, Las Vegas, NV.

With Beziau, Jean-Yves. (2002) "Possible Worlds: More Fashionable Nonsense?" Logic lunch, Stanford, CA.

With Nicholson, Tara. (2001) "On connection of modal logic and theory of hypergraphs". ILLC, Amsterdam, August, 2001.

With Jennings, R.E. (2001) "Preserving Relevant Connexions". Presented at the 10th Annual LLC Conference, Stanford, CA, May 25-27, 2001.

With Jennings, R.E. (2001) "Preservation of Relevance". Presented at *The Limits of Warrant*, Waterloo, ON, May 18-20, 2001.

With Jennings R.E. (2001) "The Preservation of Truth". Presented at *Truth and Probability*. Montreal, Qc, May 10-14, 2001.

(2001) "Some evidence for the existence of square circles". Stanford-Berkeley Graduate Student Conference, Stanford, CA, May 5, 2001.

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With Jennings R.E. (2000) "Exchanging T`s for 1`s, or on whether we understand truth". Canadian Philosophical Association meeting, Edmonton, Alberta.

With Jennings R.E. (2000) "Nobel measure and paraconsistent tolerance". 2<sup>nd</sup> World Congress on Paraconsistency, Juquehy, Brazil.

With Jennings R.E. (2000) "A completeness proof for Kn logics". SEP Conference, Florida.

(1999) "Paradox Tolerance and Meta-Valuation." SEP Conference, Lethbridge, Alberta.

(1999) "Nobel Measures of Paraconsistency." Presented at Southwest Logic Workshop, Victoria, BC.

(1998) "The Preservation of Meta-Valuational Properties and the Meta-Valuational Properties of Implication." Western Canadian Philosophical Association Conference, Vancouver, BC.

### **RECENT TEACHING AT CSU**

<u>Year</u>	<u>Semester</u>	<u>Course No./Title</u>	<u>Cr. Hrs.</u>	<u>Enrollment</u>
2007	Fall	PL210 – Intro Logic	3	40
2007	Fall	PL415 – Logical Methods	3	19
2008	Spring	PL210 – Intro Logic	3	40
2008	Spring	PL410 – Adv. Logic	3	9
2008	Fall	PL415 – Logical Methods	3	27
2008	Fall	PL210 – Intro Logic	3	40
2009	Spring	PL210 – Intro Logic	3	40
2009	Spring	PL410 – Adv. Logic	3	21
2009	Fall	PL210 – Intro Logic	3	40
2009	Fall	PL415 – Logical Methods	3	26
2009	Fall	PL100 – Appreciation of Ph.	3	180
2010	Spring	PL210 – Intro Logic	3	40
2010	Spring	PL100 – Appreciation of Ph.	3	180
2010	Spring	PL570 – Topics in Philosophy.	3	180

### ***Other Teaching Experience***

Introduction to Modal Logic (with Johan van Benthem) (Stanford, 2003)

Introduction to Logic (Stanford, 2003, 2004)

Circumstances, Expectations, and Responsibility (Hope House Program for Recovering Addicts, 2006)

Introduction to Logic (CSU, 2007, 2008, 2009)

Meat Based Computation: an Introduction to Cognitive Science (CSU, 2007)

Dynamics of Pain and Self: an Introduction to Cognitive Science (CSU, 2008)

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Dynamical Selves: an Introduction to Cognitive Science (CSU, 2009)

From Logic to Computation (CSU, 2008, 2009)

Appreciation of Philosophy (CSU, 2009, 2010)

Modal Logic, Game Theory, and Game Logics (CSU, 2010)

### ***Post Doctoral Fellow***

Fate of Reason (with Allen Wood) (Stanford, 2005)

The Human and the Machine (with Henry Lowood, Michael Shanks, Jeffrey Schnapp) (Stanford, 2005)

Fate of Reason (with Christopher Bobonich, Lanier Anderson, and Nadeem Hussain) (Stanford, 2006, 2007)

The Human and the Machine (with Henry Lowood, and Michael Shanks) (Stanford, 2006, 2007)

### ***Teaching Assistant***

Introduction to Logic (SFU, 1998)

Introduction to Philosophy of Mind (SFU, 1999)

Introduction to Logic (SFU, 1999)

Critical Thinking (SFU, 2000)

Basic Concepts in Mathematical Logic (Stanford, 2001)

Mathematical Introduction to Logic (Stanford, 2002)

Modal Logic (Stanford, 2002)

Existentialism (Stanford, 2002)

Introduction to Logic (Stanford, 2005)

Proof Theory (Stanford, 2005)

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### ***Teaching Awards***

Centennial Teaching Assistant Award, Stanford University, 2002.

The Institute for Learning and Teaching (CSU) TILT award for course improvement with the maximal financial reward, 2007.

***Student evaluations available upon request.***

### **SUMMER SCHOOLS AND WORKSHOP**

The Moody Workshop in Medieval Philosophy, UCLA, Los Angeles, CA, February, 2006.

2nd North American School in Logic, Language and Information, NASSLLI, Bloomington, IN, 2003.

1st North American School in Logic, Language and Information, NASSLLI, Stanford, CA, 2002.

The Moody Workshop in Medieval Philosophy, UCLA, Los Angeles, CA, February, 2003.

13th European Summer School in Logic, Language and Information, ESSLLI, Helsinki, Finland, 2001.

Marktobendorf Summer School 2001, Proof and System Reliability, Marktobendorf, Germany, 2001.

### **UNIVERSITY COMMITTEES**

#### ***CSU (Current)***

Undergraduate Scholarship Committee (second year), Department Advisory Committee, Undergraduate Club Advisor, Colloquium Organizer, Department Web Host.

#### ***STANFORD UNIVERSITY (Past)***

Graduate student representative at department meeting (2003)

Graduate student on admission committee (2004)

### **Organizational responsibilities**

1st World Congress and School on Universal Logic, Montreux, Switzerland, March 2005, organizing committee.

Workshop on Spatial Reasoning, Amsterdam, December 2003, principal organizer with Johan van Benthem.

The fifth annual Hybrid Logic workshop (HyLo-V), December 2003 ILLC, Amsterdam, principal organizer with Balder ten Cate, Maarten Marx, and Petrucio Viana.

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III World Congress on Paraconsistency (WCP-3), Toulouse, France, August 2003, organizing committee.

Workshop on Reasoning about Space, at the North American Summer School on Logic, Language and Information, June 2003 Bloomington, Indiana (USA) principal organizer with Marco Aiello and Guram Bezhnashvili.

Graduate student coordinator, Logical Methods in the Humanities 2002-03, A Stanford Humanities Center Research Workshop, with Andrew Arana, and G. M. Mints.

1<sup>st</sup> North American Summer School in Logic, Language and Information, NASSLLI 2002, initiator and a primary organizer. (This was the first event of this kind in North America, and the first event of this kind and scale organized solely by students.)

Workshop on Paraconsistency, at The International Conference on Artificial Intelligence, June 2001, Las Vegas, NV, organizer with Jean-Yves Beziau.

### **STUDENT ADVISING/GRADUATE SUPERVISION**

#### **UNDERGRADUATE STUDENTS:**

Current and Recent Undergraduate Advisees  
Mike Eland  
John Dunn  
Ben Harrison  
Rob Conary

#### **GRADUATE STUDENTS:**

Current and Recent Graduate Advisees

##### **Supervisor**

Jordan Kiper, M.A. (Pursuing Ph.D. at University of Connecticut)  
Jenessa Strickland, M.A. (Pursuing Ph.D. at UC Santa Barbara)

##### **Committee Member**

Erik Hoversten, M.A. (Pursuing Ph.D. at Rutgers University)  
Bogdan Kostic, Ph.D. (CSU, Psychology)

### **OTHER ACTIVITIES/ACCOMPLISHMENTS**

#### **Visiting scholar**

Aug 2010 - August 2011, *L'université de Paris 1 Panthéon - La Sorbonne* and *Institut d'histoire et de philosophie des sciences et des techniques*. Paris, France (I will spend the year between Colorado State University and Paris)

May 2008 - August 2008, *Institut d'histoire et de philosophie des sciences et des techniques*. Paris, France

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September 2003 - April 2004, *Institute for Logic Language and Information*, University of Amsterdam, Amsterdam, The Netherlands.

### **Translations and Editing**

A translation from the original German and a commentary of "Justification of *tertium non datur* by Hilbert's consistency theory" by W. Ackermann. The article was first published in *Math. Annalen* 93, 1925, 1-36 Inaugural dissertation, Goettingen 1924. This is joint work with G.M. Mints, 2004.

Logic Consultant, Richard Rufus Project (Rega Wood, Stanford, General Editor), 2002-2007 (Editing and translating Medieval philosophical text, advising on logical issues in Rufus).

**Language Skills** Bosnian (Croatian, Serbian), English, (at least some of) Dutch, English, French, Italian, German, Russian, Latin,

### **References**

can be contacted directly.