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| 2013 | Research Fellowship from the Simons Institute at UC Berkeley for the program “Theoretical Foundations of Big Data Analysis” during Fall 2013 |
| 2013 | Golden Chalk Award for excellence in teaching from IST Austria |
| 2010 – 2011 | Janggen-Poehn Fellowship (full tuition and stipend 2010-2011) |
| 2007 – 2010 | International Fulbright Science and Technology Award (full tuition and stipend, 30 fellows per year worldwide) |
| 2007 | Best Student Award of the University of Zurich (highest GPA) |

Main Research Interests

Mathematical statistics (algebraic statistics, multivariate analysis, graphical models, causal inference, maximum likelihood estimation); *Convex optimization*; *Applied algebraic geometry*; *Mathematical biology* (chromosome packing models, inference of gene regulatory networks);

Workshop and Conference Organization

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|-------------------|---|----------------------------|
| Sep 21-22, 2017 | ONR Kickoff Meeting: Predictive and Causal Modeling - Bridging the Gap | MIT |
| Apr 16-22, 2017 | Workshop on Algebraic Statistics | Oberwolfach |
| 07/25-08/19, 2016 | Short thematic program: Statistical Causal Inference and Applications to Genetics | CRM, Montréal |
| Jun 8-11, 2015 | Algebraic Statistics 2015 | University of Genoa, Italy |
| Aug 25-29, 2014 | Prague Stochastics 2014 | Academy of Sciences, CZ |
| Jul 14-17, 2014 | Algebraic Statistics Workshop | NIMS, Daejeon, South Korea |
| Sep 28-30, 2012 | Algebraic Statistics in Europe | IST Austria |

Minisymposium Organization

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|-------------------|--|-------------------|
| May 22-25, 2017 | SIAM Conference on Applied Algebraic Geometry | Georgia Tech |
| 07/30-08/04, 2016 | Topic contributed paper session sponsored by IMS | JSM, Chicago |
| Aug 3-7, 2015 | SIAM Conference on Applied Algebraic Geometry | Daejeon, Korea |
| Jul 26-31, 2015 | 60th World Statistics Congress – ISI2015 | Rio, Brazil |
| Aug 1-4, 2013 | SIAM Conference on Applied Algebraic Geometry | Colorado State U. |

Academic Service

- 2018 - 2020 Program Director, SIAM Activity Group on Algebraic Geometry
- 2017 - 2020 IMS representative, Joint Committee for Women in the Mathematical Sciences
- 2017 International hiring committee for research group leader at MPI Leipzig
- 2017 Program committee, *ISSAC*
- 2015 Program committee, *ICML*
- 2014 - Editorial board, *Journal of Algebraic Statistics*
- 2011 - Reviewer for most major Statistics journals, e.g. *Ann. Stat.*, *J. Am. Stat. Assoc.*, *J. Mach. Learn. Res.*, *Bernoulli*, *Electron. J. Stat.*; Reviewer for *ICML*;

Outreach

- 2015 - Judge for the Intel / Regeneron Science Talent Search, the most prestigious science research competition for high school seniors in the US
- 2001 - 2006 Mathematics teacher at secondary school and high school in Switzerland
- 2003 - 2007 Co-founder and manager of Thailand-Volunteering Association for Swiss students to teach Mathematics and English in Nam Rong, Thailand

Teaching

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|-----------------|--|----------------------|
| Fall '16, '17 | Statistics, Computation, and Applications (course IDS.012 / 6.419 / IDS.131 / 6.439) | MIT |
| Spring '17 | Graphical models: A Geometric, Algebraic, and Combinatorial Perspective (course 6.248 / IDS.S21) | MIT |
| Summer '16 | DataScienceX (Online MIT Professional Education Course) | MIT |
| Spring '16 | Algebraic Techniques and Semidefinite Optimization (course 6.256) | MIT |
| Spring '15 | Modeling: core PhD course | IST Austria |
| Spring '13, '14 | Applied Statistics: core PhD course | IST Austria |
| Spring '14, '15 | Convex Optimization: advanced PhD course | IST Austria |
| 06/2013 | 1-week summer school on Algebraic Statistics | Nordfjordeid, Norway |
| 2006 - 2007 | Graduate Student Instructor, Advanced Algebra | University of Zurich |
| 2001 - 2006 | High School and Middle School Teacher | Switzerland |

Students and Postdocs

Graduate students: R. Agrawal, A. Belyaeva, A. Radhakrishnan, K. Dai Yang, Y. Wang

Postdocs: K. Kubjas, E. Perrone, A. Podosinnikova

Former Postdocs: A. Klimova (now at Dresden University of Technology), A. Martin del Campo (now at CIMAT, Guanajuato), F. Mohammadi (now at Bristol University), P. Norén (now at North Carolina State University), L. Solus (now at KTH Stockholm)

Publications

- 38 RADHAKRISHNAN, A., SOLUS, L. AND UHLER, C., “Counting Markov equivalence classes for DAG models on trees”, submitted, preprint available at <https://arxiv.org/abs/1706.06091>.
- 37 RADHAKRISHNAN, A., DURHAM, C., SOYLEMEZOGLU, A. AND UHLER, C., “PatchNet: Interpretable neural networks for image classification”, submitted, preprint available at <https://arxiv.org/abs/1705.08078>.
- 36 ROBEVA, E., STURMFELS, B. AND UHLER, C., “Geometry of log-concave density estimation”, submitted, preprint available at <http://arxiv.org/abs/1704.01910>.
- 35 SOLUS, L., WANG, Y., MATEJOVICOVA, L. AND UHLER, C., “Consistency guarantees for permutation-based causal inference algorithms”, submitted, preprint available at <http://arxiv.org/abs/1702.03530>.
- 34 RASKUTTI, G. AND UHLER, C., “Learning directed acyclic graphs based on sparsest permutations”, preprint available at <http://arxiv.org/abs/1307.0366>.
- 33 LAURITZEN, S., UHLER, C. AND ZWIERNIK, P., “Maximum likelihood estimation in Gaussian models under total positivity”, to appear in *Annals of Statistics*, preprint available at <http://arxiv.org/abs/1702.04031>.
- 32 UHLER, C. AND RICHARDS, D., “Generalized Fréchet bounds for cell entries in multidimensional contingency tables”, to appear in *Journal of Algebraic Statistics* (special issue for Stephen E. Fienberg), preprint available at <https://arxiv.org/abs/1708.02708>.
- 31 MOHAMMADI, F., UHLER, C., WANG, C. AND YU, J., “Generalized permutohedra from probabilistic graphical models”, to appear in *SIAM Journal on Discrete Mathematics*, preprint available at <http://arxiv.org/abs/1606.01814>.
- 30 UHLER, C., “Gaussian graphical models: An algebraic and geometric perspective”, to appear as a book chapter in *Handbook of Graphical Models* (eds:), preprint available at <https://arxiv.org/abs/1707.04345>.
- 29 WANG, Y., SOLUS, L., YANG, K. D. AND UHLER, C., “Permutation-based causal inference algorithms with interventions”, to appear in *NIPS*, preprint available at <https://arxiv.org/abs/1705.10220>.

- 28 UHLER, C., LENKOSKI, A. AND RICHARDS, D., “Exact formulas for the normalizing constants of Wishart distributions for graphical models”, to appear in *Annals of Statistics*, preprint available at <http://arxiv.org/abs/1406.4901>.
- 27 RADHAKRISHNAN, A., DAMODARAN, D., SOYLEMEZOGLU, A. C., UHLER, C. AND SHIVASHANKAR, G. V., “Machine learning for nuclear mechano-morphometric biomarkers in cancer diagnosis”, *Scientific Reports* 7 (2017), article nr. 17946.
- 26 BELYAEVA, A., VENKATACHALAPATHY, S., NAGARAJAN, M., SHIVASHANKAR, G. V. AND UHLER, C., “Network analysis identifies chromosome intermingling regions as regulatory hotspots for transcription”, *Proceedings of the National Academy of Sciences, U.S.A* 114 (2017), pp. 13714–13719.
- 25 UHLER, C. AND SHIVASHANKAR, G.V., “The regulation of genome organization and gene expression by nuclear mechanotransduction”, *Nature Reviews Molecular Cell Biology*, 18 (2017), pp. 717–727.
- 24 UHLER, C. AND SHIVASHANKAR, G.V., “Chromosome intermingling: Mechanical hotspots for genome regulation”, *Trends in Cell Biology*, 27 (2017), pp. 810–819.
- 23 ZWIERNIK, P., UHLER, C. AND RICHARDS, D., “Maximum likelihood estimation for linear Gaussian covariance models”, *Journal of the Royal Statistical Society Series B*, 79 (2017), pp. 1269–1292.
- 22 WANG, Y., NAGARAJAN, M., UHLER, C. AND SHIVASHANKAR, G.V., “Orientation and repositioning of chromosomes correlate with cell geometry-dependent gene expression”, *Molecular Biology of the Cell*, 28 (2017), pp. 1997–2009.
- 21 RADHAKRISHNAN, A., SOLUS, L. AND UHLER, C., “Counting Markov equivalence classes by number of immoralities”, Proceedings of the Thirty-Third Conference on Uncertainty in Artificial Intelligence (2017).
- 20 FALLAT, S., LAURITZEN, S., SADEGHI, K., UHLER, C., WERMUTH, N. AND ZWIERNIK, P., “Total positivity in Markov structures”, *Annals of Statistics*, 45 (2017), pp. 1152–1184.
- 19 MARTIN DEL CAMPO, A., CEPEDA, S. AND UHLER, C., “Exact goodness-of-fit testing for the Ising model”, *Scandinavian Journal of Statistics*, 44 (2017), pp. 285–306.
- 18 SOLUS, L., UHLER, C. AND YOSHIDA, R., “Extremal positive semidefinite matrices for graphs without K_5 minors”, *Linear Algebra and its Applications*, 509 (2016), pp. 247–275.
- 17 UHLER, C. AND SHIVASHANKAR, G.V., “Geometric control and modeling of genome reprogramming”, *BioArchitecture*, 6 (2016), pp. 76–84.
- 16 MICHALEK, M., STURMFELS, B., UHLER, C. AND ZWIERNIK, P., “Exponential varieties”, *Proceedings of the London Mathematical Society*, 112 (2016), pp. 27–56.

- 15 KLIMOVA, A., UHLER, C. AND RUDAS, T., “Faithfulness and learning of hypergraphs from discrete distributions”, *Journal of Computational Statistics and Data Analysis*, 87 (2015), pp. 57–72.
- 14 LIN, S., UHLER, C., STURMFELS, B. AND BÜHLMANN, P., “Hypersurfaces and their singularities in partial correlation testing”, *Foundations of Computational Mathematics*, 14 (2014), pp. 1079–1116.
- 13 YU, F., RYBAR, M., UHLER, C. AND FIENBERG, S. E., “Differentially private logistic regression for detecting multiple-SNP association in GWAS databases”, *Privacy in Statistical Databases*, 8744 (2014), pp. 170–184.
- 12 IGLESIAS-HAM, M., KERBER, M. AND UHLER, C., “Sphere packing with limited overlap”, *Proc. 26th Canadian Conference on Computational Geometry, Halifax, Nova Scotia* (2014), pp. 155–161.
- 11 YU, F., FIENBERG, S. E., SLAVKOVIĆ, A. AND UHLER, C., “Scalable privacy-preserving data sharing methodology for genome-wide association studies”, *Journal of Biomedical Informatics*, 50 (2014), pp. 133–141.
- 10 UHLER, C. AND WRIGHT, S. J., “Packing ellipsoids with overlap”, *SIAM Review*, 55 (2013), pp. 671–706. (selected as Research Spotlight).
- 9 UHLER, C., RASKUTTI, G., BÜHLMANN, P. AND YU, B., “Geometry of faithfulness assumption in causal inference”, *Annals of Statistics* 41 (2013), pp. 436–463.
- 8 UHLER, C., FIENBERG, S. E. AND SLAVKOVIĆ, A., “Privacy-preserving data sharing for genome-wide association studies”, *Journal of Privacy and Confidentiality* 5 (2013), pp. 137–166.
- 7 UHLER, C., “Geometry of maximum likelihood estimation in Gaussian graphical models”, *Annals of Statistics* 40 (2012), pp. 238–261.
- 6 FIENBERG, S. E. SLAVKOVIĆ, A. AND UHLER, C., “Privacy preserving GWAS data sharing”, *Proc. 11th IEEE International Conference on Data Mining, Vancouver, Canada* (2011), pp. 628–635.
- 5 MALASPINAS, A. AND UHLER, C., “Detecting epistasis via Markov bases”, *Journal of Algebraic Statistics* 2 (2011), pp. 36–53.
- 4 STURMFELS, B. AND UHLER, C., “Multivariate Gaussians, semidefinite matrix completion and convex algebraic geometry”, *Annals of the Institute of Statistical Mathematics* 62 (2010), pp. 603–638.
- 3 EVANS, S. N., STURMFELS, B. AND UHLER, C., “Commuting birth-and-death processes”, *Annals of Applied Probability* 20 (2010), pp. 238–266.
- 2 UHLER, C., “Mastitis in dairy production: Estimation of sensitivity, specificity and disease prevalence in the absence of a gold standard,” *Journal of Agricultural, Biological, and Environmental Statistics* 14 (2009), pp. 79–98.

- 1 GREEN, R. E., MALASPINAS, A., KRAUSE, J., BRIGGS, A. W., JOHNSON, P. L., UHLER, C., MEYER, M., GOOD, J. M., MARICIC, T., STENZEL, U., PRÜFER, K., SIEBAUER, M., BURBANO, H. A., RONAN, M., ROTHBERG, J. M., EGHOLM, M., RUDAN, P., BRAJKOVIĆ, D., KUĆAN, Z., GUSIĆ, I., WIKSTRÖM, M., LAAKKONEN, L., KELSO, J., SLATKIN, M., AND PÄÄBO, S., “A complete Neandertal mitochondrial genome sequence determined by high-throughput sequencing”, *Cell* 134 (2008), pp. 416–426.

Plenary Invited Talks

- 08/2017 SIAM Conference on Applied Algebraic Geometry. Georgia Tech.
- 08/2016 5th International Conference on Continuous Optimization (ICCOPT). Tokyo.
- 07/2015 Current Trends on Gröbner Bases. Osaka, Japan.
- 06/2015 Conference on Effective Methods in Algebraic Geometry (MEGA). Trento.
- 06/2012 Algebraic Statistics in the Alleghenies. Penn State U.

Invited Talks

- 12/2017 10th International Conference on Computational and Methodological Statistics (CMStatistics 2017), London UK
- 12/2017 NIPS Workshop on Advances in Modeling and Learning Interactions from Complex Data, Los Angeles, CA
- 11/2017 Statistics Colloquium. Harvard University.
- 10/2017 Colloquium. Naval Postgraduate School, Monterey.
- 10/2017 Beyond Convexity: Emerging Challenges in Data Science. Oaxaca.
- 07/2017 European Meeting of Statisticians. Helsinki.
- 06/2017 Workshop on Algebraic and Combinatorial Phylogenetics. Barcelona.
- 06/2017 Seminar. Seminar for Statistics, ETH Zurich.
- 06/2017 Workshop on High-Dimensional Time Series in Macroeconomics and Finance. Institute for Advanced Studies, Vienna.
- 05/2017 Seminar. Department of Biosystems Science and Engineering, ETH Zurich.
- 05/2017 SIAM Conference on Optimization. Vancouver.
- 04/2017 Special Seminar. Max Planck Institute for Mathematics in the Sciences, Leipzig.
- 03/2017 Statistics Seminar. University of Washington.
- 02/2017 Women in Data Science (WiDS). Boston, MA.
- 01/2017 Statistics Seminar. Universitat Pompeu Fabra.
- 11/2016 Data Science Colloquium. Brown University.
- 10/2016 Mathematics Seminar. National University of Singapore.

10/2016 Conference on Conditional Independence Structures and Extremes, Munich.
10/2016 PICS Symposium “Emerging Paradigmes in Scientific Discovery”, UPenn.
10/2016 Computational and Systems Biology Retreat. MIT.
08/2016 Joint Statistical Meetings (JSM). Chicago.
07/2016 SIAM Annual Meeting. Boston.
07/2016 9th World Congress on Probability and Statistics. Toronto.
06/2016 4th Institute of Mathematical Statistics Asia Pacific Rim Meeting. Hong Kong.
05/2016 MBI-IFOM Joint Retreat. Milano.
05/2016 Symposium on Mathematical & Computational Biology. UPenn.
03/2016 Symposium. LabLinks, Gene Circuits, Broad Institute, Boston.
03/2016 Scientific Computing Seminar. Division of Applied Mathematics, Brown U.
02/2016 Biophysical Society Meeting. Los Angeles.
02/2016 Seminar. Department of Statistics, University of Chicago.
02/2016 Seminar. Models, Inference and Algorithms, Broad Institute, Boston.
01/2016 Workshop on Optimization and Parsimonious Modeling. IMA, Minneapolis.
01/2016 Meeting on Information Processing in Biological Systems. ICTS, Bangalore.
12/2015 Seminar. London Business School.
12/2015 8th Intl Conference on Computational and Methodological Statistics. London.
12/2015 Seminar. Operations Research and Financial Engineering, Princeton University.
11/2015 Algebra Seminar. School of Mathematics, Georgia Tech.
11/2015 Colloquium. College of Sciences and Mathematics, Auburn University.
11/2015 Colloquium. School of Mathematics, Georgia Tech.
08/2015 Seminar. Mechanobiology Institute, National University of Singapore.
08/2015 SIAM Conference on Applied Algebraic Geometry. Daejeon, Korea
07/2015 60th World Statistics Congress – ISI2015. Rio de Janeiro, Brazil.
07/2015 Current Trends on Gröbner Bases. Osaka, Japan.
06/2015 Conference on Effective Methods in Algebraic Geometry (MEGA). Trento.
05/2015 Workshop on NonLinear Algebra. Berlin.
03/2015 Seminar. Department of Electrical Engineering and Computer Science, MIT.
03/2015 Seminar. Department of Mathematics, EPFL.
03/2015 Seminar. Department of Statistics, Université Libre de Bruxelles.
02/2015 Seminar. Department of Mathematics, MIT.
02/2015 Seminar. Department of Computing and Mathematical Sciences, Caltech.
01/2015 Colloquium. Department of Mathematics, UC Berkeley.
01/2015 Seminar. Department of Mathematics, UC San Diego.
01/2015 Seminar. Department of Statistics, Columbia University.

12/2014 Big Data Reunion Workshop. Simons Institute, UC Berkeley.
11/2014 Seminar. Department of Statistics, University of Oxford.
11/2014 Seminar. Department of Statistics, Columbia University.
11/2014 Seminar. Department of Computing and Mathematical Sciences, Caltech.
10/2014 AMS Fall Western Sectional Meeting. San Francisco State University.
10/2014 Seminar. Computational Algebraic Geometry. UC Berkeley.
10/2014 Seminar. Department of Statistics, University of Pennsylvania.
08/2014 21st International Conference on Computational Statistics. Geneva, Switzerland.
07/2014 Workshop on Algebraic Statistics. NIMS, Daejeon, South Korea.
07/2014 Australian Statistical Conference. Sydney, Australia.
06/2014 Kreisky Forum. Vienna, Austria.
06/2014 Workshop on Simplicity and Causal Discovery. Carnegie Mellon University.
05/2014 Series on Systems, Information, Learning and Optimization. Wisconsin
Institute of Discovery, University of Wisconsin - Madison.
05/2014 Algebraic Statistics Meeting. IIT Chicago.
05/2014 Applied Algebra Days. University of Wisconsin-Madison.
05/2014 Statistics Seminar. Statistical Laboratory, University of Cambridge.
03/2014 Seminar. Department of Mathematics, Comenius University, Bratislava.
03/2014 Conference on Applications of Real Algebraic Geometry. Aalto U., Finland.
01/2014 Discrete Mathematics and Optimization Seminar. Alpen-Adria U., Klagenfurt.
11/2013 Research Seminar. Cell Biology, UC Berkeley.
11/2013 Workshop on Graphical Models. Ruprecht-Karls-Universität Heidelberg.
08/2013 Seminar. Institute for Infocomm Research, Singapore.
08/2013 Seminar. Mechanobiology Institute, National University of Singapore.
08/2013 SIAM Conference on Applied Algebraic Geometry. Colorado State University.
07/2013 International Conference on Continuous Optimization. Lisbon, Portugal.
07/2013 European Meeting of Statisticians. Budapest, Hungary.
06/2013 19th Conference on Applications of Computer Algebra. Malaga, Spain.
05/2013 Computer Science Seminar. IST Austria.
05/2013 Statistics Seminar. Medical University of Vienna
04/2013 Seminar on Complex and Stochastic Systems. Physics Dep., U. of Vienna.
03/2013 Colloquium. Department of Mathematics, University of Vienna
03/2013 Wien - Linz Workshop on Algebraic Geometry. Wachau, Austria.
02/2013 Seminar. Department of Statistics, Harvard University.
02/2013 Algebraic Statistics Seminar. UC Berkeley.

02/2013 Seminar. Department of Statistics, Stanford University.

01/2013 Seminar. Department of Statistics, University of Wisconsin - Madison.

10/2012 Biomathematics Seminar. University of Vienna.

09/2012 Seminar. Computational Science Center, University of Vienna.

08/2012 21st International Symposium on Mathematical Programming. Berlin.

07/2012 Series on Systems, Information, Learning and Optimization. Wisconsin Institute of Discovery, University of Wisconsin - Madison.

06/2012 Seminar. Department of Biosystems, Science and Engineering, ETH Zurich.

06/2012 Research Seminar. Seminar for Statistics, ETH Zurich.

05/2012 Computer Algebra Seminar. Research Inst. for Symbolic Computation, Linz.

05/2012 Institute for Statistics and Operations Research Colloquium. U. of Vienna.

04/2012 Computational Algebra Seminar. UC Berkeley.

02/2012 Optimization & Applications Seminar. Institute for Operations Research, ETH Zurich.

10/2011 IMA Postdoc Seminar. University of Minnesota.

10/2011 SIAM Conference on Applied Algebraic Geometry, North Carolina State U.

06/2011 CDI Meeting: Integrating Statistics and Computational Approaches to Data Privacy, Penn State University.

04/2011 Seminar on Computational Topology. Stanford University.

12/2010 Research Seminar in Statistics. ETH Zurich.

09/2010 Statistics and Genomics Seminar. UC Berkeley.

06/2010 The Second CREST-SBM International Conference on Harmony of Groebner Bases and the Modern Industrial Society. Osaka, Japan.

03/2010 AMS Sectional Meeting on Advances in Algebraic Statistics. Lexington, KY.

03/2010 Seminar on Convex Algebraic Geometry, UC Berkeley.

07/2009 Second de Brun Workshop on Computational Algebra. Galway, Ireland.

06/2009 Group meeting of Monique Laurent. CWI Amsterdam.

06/2009 EIDMA Seminar on Combinatorial Theory. Technische Universiteit Eindhoven.

05/2009 FRG Meeting: Semidefinite Optimization & Convex Algebraic Geometry. MIT.

04/2009 Seminar on Discrete Mathematics. UC Berkeley.

12/2008 Workshop on Algebraic Statistics. MSRI, Berkeley.

10/2008 Seminar on Discrete Mathematics. UC Berkeley.

08/2008 Seminar. Department of Biosystems, Science and Engineering. ETH Zurich.

07/2008 Seminar on Model Selection. Technische Universität Berlin.

Additional Conference Attendance

- 10/2014 AIM Workshop on “Positivity, graphical models, and modeling of complex multivariate dependencies”. AIM Conference Center, Palo Alto.
- 11/2013 The Statistics 2013 Capstone Event: Workshop about the Future of the Statistical Sciences. Royal Statistical Society, London (attendance by invitation only).
- 06/2013 4D Nucleome Workshop. Institute of Molecular Biology, Mainz, Germany.
- 12/2011 AIM Workshop on “Singular Learning Theory: Connecting Algebraic Geometry and Model Selection in Statistics”. AIM Conference Center, Palo Alto.
- 10/2010 AIM Workshop on “Parameter Identification in Graphical Models”. AIM Conference Center, Palo Alto.
- 09/2008 Opening Workshop on Algebraic Methods in Systems Biology and Statistics. SAMSI, Research Triangle Park, NC.
- 07/2008 XX International Congress of Genetics. Berlin, Germany.
- 06/2008 LMS Durham Symposium on Mathematical Aspects of Graphical Models. Durham, UK
- 03/2007 IMA Workshop on Applications in Biology, Dynamics and Statistics. University of Minnesota.
- 06/2006 Summer School on Algebraic Statistics, Tropical Geometry and Computational Biology. Nordfjordeid, Norway.