

Sofia Lambropoulou

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Research Interests

Knot theory; low-dimensional topology; braid theory; knots and braids in 3-manifolds; quotient algebras of braid groups; construction of Jones-type invariants; applications of knots, braids, knotoids and braidoids to physics, chemistry and biology; applications of topological surgery to natural processes.

Academic Qualifications

- Qualification Maître de Conférence, French Ministry of Education, Sept. 2002.
- Ph.D., University of Warwick, UK, July 1993 (Advisor - C.P. Rourke).
- M.Sc., University of Warwick, UK, September 1989.
- B.Sc., University of Athens, Greece, 1988.

Academic Positions

- 2013 – : Professor, National Technical University of Athens, Greece.
- 2000 – 2012: Associate Professor, National Technical University of Athens, Greece.
- 2003 – 2004: Visiting Maître de Conférences, Université de Caen, France.
- 1996 – 2000: C1-Stelle, Georg-August-Universität Göttingen, Germany.
- 1995 – 1996: Postdoctoral Research Fellow, University of Athens, Greece.
- 1993 – 1995: Postdoctoral Research Fellow, University of Cambridge, UK.

Scholarships - Fellowships

- 1995 – 1996: European Commission Return Fellowship, Training and Mobility of Researchers scheme.
- 1993 – 1995: European Commission Individual Postdoctoral Research Fellowship, Human Capital and Mobility Scheme.
- 1990 – 1993: Greek State Scholarship Foundation doctoral grant.
- 1989 – 1990: University of Warwick Award and partial support by the Onassis Foundation.

Publications in Scientific Journals and Refereed Proceedings

1. (with M. Chlouveraki, J. Juyumaya and K. Karvounis) Identifying the invariants for classical knots and links from the Yokonuma-Hecke algebras, accepted for publication in *International Mathematics Research Notices*. See arXiv:1505.06666.
2. (with D. Goundaroulis) A new 2-variable generalization of the Jones polynomial, accepted in *J. Knot Theory Ramif.* See arXiv:1608.01812.
3. (with N. Ggmc) Knotoids, braidoids and applications, *Symmetry* 9 (2017), No.12, 315; See <http://www.mdpi.com/2073-8994/9/12/315> (issue cover).
4. (with L.H. Kauffman) Skein invariants of links and their state sum models, *Symmetry* 9 (2017, No.12, 226; See <http://www.mdpi.com/2073-8994/9/10/226>.
5. (with S. Antoniou) Extending Topological Surgery to Natural Processes and Dynamical Systems, *PLoS ONE* 12 (2017), No.9: e0183993. <https://doi.org/10.1371/journal.pone.0183993>.
6. (with D. Goundaroulis, N. Ggmc, J. Dorier, A. Stasiak and L. H. Kauffman) Topological models for open knotted protein chains using the concepts of knotoids and bonded knotoids, *Polymers*, Special issue on *Knotted and Catenated Polymers*, D. Racko and A. Stasiak, Eds.; (2017), 9, No.9, 444. <http://www.mdpi.com/2073-4360/9/9/444>.
7. (with M. Flores and J. Juyumaya) A Framization of the Hecke algebra of type B, *J. Pure Appl. Algebra* (2017), <https://doi.org/10.1016/j.jpaa.2017.05.006>.
8. (with D. Kodokostas) Hecke-type quotients of the mixed braid group with two fixed identity strands, in *Algebraic Modeling of Topological and Computational Structures and Applications*, THALES, Athens, Greece, July 1-3, 2015, *Springer Proceedings in Mathematics & Statistics (PROMS)*, Vol. 219; S. Lambropoulou, P. Stefanias, D. Theodorou and L.H. Kauffman, Eds; 2017; <https://doi.org/10.1007/978-3-319-68103-0>. (pdf).

9. (with D. Goundaroulis) Classical link invariants from the framizations of the Iwahori-Hecke algebra and the Temperley-Lieb algebra of type A , *J. Knot Theory Ramif.* 26 (2017), No.9, <https://doi.org/10.1142/S0218216517430052>.
10. (with S. Antoniou) Topological Surgery, Dynamics and Applications to Natural Processes, *J. Knot Theory Ramif.* 26 (2017), No.9, <https://doi.org/10.1142/S0218216517430027>.
11. (with D. Goundaroulis, J. Juyumaya and A. Kontogeorgis) Framization of the Temperley-Lieb Algebra, *Math. Res. Lett.* 24 (2017), No.2, 299-345. <http://dx.doi.org/10.4310/MRL.2017.v24.n2.a3>.
12. (with I. Diamantis and J. Przytycki) Topological steps toward the HOMFLYPT skein module of the lens spaces $L(p, 1)$ via braids, *J. Knot Theory Ramif.* 25 (2016), No.14, <https://doi.org/10.1142/S021821651650084X>.
13. (with S. Chmutov, S. Jablan and K. Karvounis) On the link invariants from the Yokonuma-Hecke algebras, *J. Knot Theory Ramif.* 25 (2016), No.9, <https://doi.org/10.1142/S0218216516410042>.
14. (with I. Diamantis) Braid equivalences in 3-manifolds with rational surgery description, *Topology Applications* (2015), <http://dx.doi.org/10.1016/j.topol.2015.08.009>.
15. (with I. Diamantis) A new basis for the Homflypt skein module of the solid torus, *J. Pure Appl. Algebra* (2015), <http://dx.doi.org/10.1016/j.jpaa.2015.06.014>.
16. (with J. Juyumaya) On the framization of knot algebras, in *New Ideas in Low-Dimensional Topology*, L.H. Kauffman, V. Manturov, Eds; Ser. Knots Everything, *World Scientific Press*, (2015), https://doi.org/10.1142/9789814630627_0008.
17. (with D. Goundaroulis, J. Juyumaya and A. Kontogeorgis) The Yokonuma-Temperley-Lieb Algebra, *Banach Center Pub.* 103, pp.73-95 (2014). DOI:10.4064/bc103-0-3.
18. (with M. Chlouveraki) The Yokonuma-Hecke algebras and the HOMFLYPT polynomial, *J. Knot Theory Ramif.* 22 (2013), No. 14, <https://doi.org/10.1142/S0218216513500806>.
19. (with J. Juyumaya) p -adic framed braids II, *Advances Math.* 234 (2013), 149-191, <http://www.sciencedirect.com/science/article/pii/S0001870812004021>.
20. (with E. Panagiotou and K. Millett) Quantifying entanglement for collections of chains in periodic boundary conditions models, in *Procedia IUTAM: Topological Fluid Dynamics II*, 7 (2013), 251-260, <http://www.sciencedirect.com/science/article/pii/S2210983813000539>.
21. (with E. Panagiotou, K. Millett, C. Tzoumanekas and D.N. Theodorou) A study of the entanglement in systems with periodic boundary conditions, *Prog. Theor. Phys. Supplement* 191 (2011), 172-181, <https://doi.org/10.1143/PTPS.191.172>.

22. (with E. Karali and D. Koutsouris) Elastic models: a comparative study applied to retinal images, *Technology and Health Care*, vol. 19, 1-13, IOS Press, (2011), <https://www.ncbi.nlm.nih.gov/pubmed/22129941>.
23. (with L.H. Kauffman) A categorical model for the virtual braid group, in *LAGB Communications in Algebra* 39 (2011), No. 12, special issue for Miriam Cohen; L. Rowen, H.J. Schneider, Eds.; Taylor & Francis, <https://doi.org/10.1080/00927872.2011.617280>.
24. (with L.H. Kauffman) Hard Unknots and Collapsing Tangles, in *Introductory Lectures on Knot Theory* with subtitle *Selected Lectures presented at the Advanced School and Conference on Knot Theory and its Applications to Physics and Biology*, ICTP, Trieste, Italy, 11 - 29 May 2009; L.H. Kauffman, S. Lambropoulou, J.H. Przytycki, S. Jablan, Eds.; *Ser. Knots Everything*, vol. 46; World Scientific Press, (2011); pp. 187-247, <http://www.worldscientific.com/worldscibooks/10.1142/7784>.
25. (with E. Karali, S. Pavlopoulos and D. Koutsouris) ISWLS: Novel algorithm for image reconstruction in PET, *IEEE Transactions on Information Technology in Biomedicine* 15 (2011), No. 13, 381-386, <https://www.ncbi.nlm.nih.gov/pubmed/21216719>.
26. (with E. Androulaki, I. Economou and J. Przytycki) Inductive construction of 2-connected graphs for analyzing the virial coefficients in thermodynamics, *J. Phys. A: Math. Theor.* 43 (2010), <http://iopscience.iop.org/article/10.1088/1751-8113/43/31/315004/meta>.
27. (with J. Juyumaya) An adelic extension of the Jones polynomial, in *The Mathematics of Knots, Theory and Application*; M. Banagl, D. Vogel, Eds.; *Contributions in Mathematical and Computational Sciences*, Vol. 1; Springer, (2010); pp. 125-142, <https://link.springer.com/chapter/10.1007>.
28. (with E. Panagiotou and K.C. Millett) The linking number and the writhe of uniform random walks and polygons in confined space, *J. Phys. A: Math. Theor.* 43 (2010), <http://iopscience.iop.org/article/10.1088/1751-8113/43/4/045208/meta>.
29. (with J. Juyumaya) An invariant for singular knots, *J. Knot Theory Ramif.* 18 (2009), No. 6, 825-840, <https://doi.org/10.1142/S0218216509007324>.
30. *L*-moves and Markov theorems, *J. Knot Theory Ramif.* 16 (2007), No. 10, 1-10, <http://www.worldscientific.com/doi/abs/10.1142/S0218216507005919>.
31. (with J. Juyumaya) *p*-adic framed braids, *Topology and its Applications* 154 (2007), No. 8, 1804-1826, <https://doi.org/10.1016/j.topol.2007.01.010>.
32. (with L.H. Kauffman) Unknots and Molecular Biology, *Milan J. Math.* 74 (2006), 227-263, <https://doi.org/10.1007/s00032-006-0063-3>.
33. (with L.H. Kauffman) Virtual braids and the *L*-move, *J. Knot Theory Ramif.* 15 (2006), No. 6, 773-811, <https://doi.org/10.1142/S0218216506004750>.

34. (with C.P. Rourke) Algebraic Markov equivalence for links in 3-manifolds, *Compositio Mathematica* 142 (2006), 1039-1062, <https://doi.org/10.1112/S0010437X06002144>.
35. (with L.H. Kauffman) Virtual braids, *Fundamenta Mathematicae* 184 (2004), 159-186, <https://www.impan.pl/pl/wydawnictwa/czasopisma-i-serie-wydawnicze/fundamenta-mathematicae/all/184/0/89055/virtual-braids>.
36. (with L.H. Kauffman) On the classification of rational tangles, *Advances Applied Math.* 33 (2004), No. 2, 199-237, <https://doi.org/10.1016/j.aam.2003.06.002>.
37. (with L.H. Kauffman) On the classification of rational knots, *L'Enseignement Mathématique* 49 (2003), 357-410, arXiv:math/0212011.
38. (with L.H. Kauffman) Classifying and applying rational knots and rational tangles, in *Physical Knots: Knotting, Linking and Folding Geometric Objects in \mathbb{R}^3* ; J.A. Calvo, K.C. Millett, E.J. Rawdon, Eds.; *Contemporary Mathematics Series*, vol. 304; AMS Prov. RI, 2002; pp. 223-258, (pdf).
39. (with R. Häring-Oldenburg) Knot theory in handlebodies, *J. Knot Theory Ramif.* (2002), 11, No. 6, 921-943, <https://doi.org/10.1142/S0218216502002050>.
40. Braid structures in knot complements, handlebodies and 3-manifolds, in *Knots in Hellas '98* with subtitle *Proceedings of the Conference on Knot Theory and its Ramifications*, European Cultural Centre of Delphi, 7-15 August 1998, C.McA. Gordon, V.F.R. Jones, L.H. Kauffman, S. Lambropoulou, J.H. Przytycki, Eds.; Ser. Knots Everything, vol. 24; *World Scientific Press*, (2000); pp. 274-289, (pdf).
41. Knot theory related to generalized and cyclotomic Hecke algebras of type B, *J. Knot Theory Ramif.* (1999), 8, No. 5, 621-658, <https://doi.org/10.1142/S0218216599000419>.
42. (with C.P. Rourke) Markov's theorem in 3-manifolds, *Topology Appl.* 78 (1997), 95-122, [https://doi.org/10.1016/S0166-8641\(96\)00151-4](https://doi.org/10.1016/S0166-8641(96)00151-4).
43. (with M. Geck) Markov traces and knot invariants related to Iwahori-Hecke algebras of type B, *J. reine angew. Math.* 482 (1997), 191-213, <https://doi.org/10.1515/crll.1997.482.191>.
44. Solid torus links and Hecke algebras of B-type, in *Quantum Topology*; D.N. Yetter Ed.; World Scientific Press, (1994); pp. 225-245, (pdf).

Papers Submitted for Publication

1. (with D. Kodokostas) A spanning set and potential basis of the mixed Hecke algebra on two fixed strands.
2. (with L. H. Kauffman) New skein invariants of links. See arXiv:1703.03655.

3. (with I. Diamantis) An important step for the computation of the HOMFLYPT skein module of the lens spaces $L(p, 1)$ via braids.
4. (with N. Gügümcü) Bradoids.

Monographs in Preparation

1. “Braid structures and braid equivalences in 3-manifolds”, for the Series of Knots and Everything, World Scientific Publ. Co. [By invitation, in advanced stage]
2. (with D. Buck and L.H. Kauffman) “Topology, Knots and DNA”, for Cambridge University Press. [By invitation, in mature stage]
3. (with I. Diamantis, B. Gabrovsek and M. Mroczkowski) “On the knot theory of lens spaces”, for Walter De Gruyter. [By invitation, in initial stage]

Preprints – Technical Reports

1. (joint work with S. Antoniou, N. Samardzija, I. Diamantis) Topological Surgery and Dynamics, *MF Oberwolfach Report 26* (2014), (Workshop: Algebraic Structures in Low-Dimensional Topology).
2. (with M. Chlouveraki) The 2-variable Jones polynomial and the invariants from the Yokonuma–Hecke algebras, *MF Oberwolfach Report 28* (2012).
3. (with L.H. Kauffman) A Categorical Model for the Virtual Braid Group, in *J. Knot Theory Ramif.* 21 (2012), No. 13, 1240008 - Special Issue on Virtual Knot Theory, Vol. I.
4. Braid equivalences and the L -moves, *Oberwolfach Preprints OWP 20* (2011).
5. (with J. Juyumaya) Invariants of framed links and p -adic framed links, *MF Oberwolfach Report 22* (2008), pp. 1192-1195.
6. (with L.H. Kauffman) Virtual braids, Rapport de recherche 41 (2004), *Université de Caen CNRS UMR 6139*.
7. (with C.P. Rourke) Algebraic Markov equivalence for links in 3-manifolds, Rapport de recherche 40 (2004), *Université de Caen CNRS UMR 6139*.
8. Braid groups related to knot complements, handlebodies and 3-manifolds, *Mathematica Gottingensis*, Heft 01 (2000).
9. Knot theory related to generalized and cyclotomic Hecke algebras of type B, *Mathematica Gottingensis*, Heft 25 (1997).
10. (with C.P. Rourke) Markov’s theorem in 3-manifolds, *Mathematica Gottingensis*, Heft 46 (1995).

11. (with M. Geck) Markov traces and knot invariants related to Iwahori-Hecke algebras of type B, *Mathematica Gottingensis*, Heft 25 (1995).
12. On Markov's theorem, *Warwick University Preprint* 30 (1992).

Chapters in Books – Survey Papers

1. Braid representations, by invitation in the *Concise Encyclopedia of Knot Theory*, for March 31, 2018.
2. (with S. Antoniou) Topological Surgery in Nature, in *Algebraic Modeling of Topological and Computational Structures and Applications*, THALES, Athens, Greece, July 1-3, 2015, *Springer Proceedings in Mathematics & Statistics (PROMS)*, Vol. 219; S. Lambropoulou, P. Stefanias, D. Theodorou and L.H. Kauffman, Eds; 2017; <https://doi.org/10.1007/978-3-319-68103-0>.
3. (with I. Diamantis) On the HOMFLYPT skein module of the lens spaces $L(p,1)$ via braids, in *Algebraic Modeling of Topological and Computational Structures and Applications*, THALES, Athens, Greece, July 1-3, 2015, *Springer Proceedings in Mathematics & Statistics (PROMS)*, Vol. 219; S. Lambropoulou, P. Stefanias, D. Theodorou and L.H. Kauffman, Eds; 2017; <https://doi.org/10.1007/978-3-319-68103-0>.
4. (with K. Karvounis) Link invariants from the Yokonuma-Hecke algebras, in *Algebraic Modeling of Topological and Computational Structures and Applications*, THALES, Athens, Greece, July 1-3, 2015, *Springer Proceedings in Mathematics & Statistics (PROMS)*, Vol. 219; S. Lambropoulou, P. Stefanias, D. Theodorou and L.H. Kauffman, Eds; 2017; <https://doi.org/10.1007/978-3-319-68103-0>.
5. Knts in Hellas 2016: Exploring the world of advanced mathematics, *IOA Journal* 10 (2016), 48–50.
6. (with S. Carter, D. Crowe, G. Darvas, A. Henrich, D. Huylebrouck, J. Kapraff, L.H. Kauffman, J.H. Przytycki, L. Radović, R. Sazdanovic, V.W. de Spinadel and A. Zeković) Remembering Slavik Jablan, *J. Knot Theory Ramif.* 25, No. 9 (2016) 1602002.
7. (with D. Crowe, G. Darvas, D. Huylebrouck, J. Kapraff, L.H. Kauffman, J.H. Przytycki, L. Radović, R. Sazdanovic, V.W. de Spinadel, A. Zeković and Symmetry Editorial Office) *Obituary* In Memoriam: Slavik Jablan 1952–2015, *Symmetry* 07/2015; 7(3):1261-1274.
8. (with L.H. Kauffman) A categorical model for the virtual braid group, MF Oberwolfach Preprints OWP 2011 - 19.

9. Braid equivalences and the L -moves, in *Introductory Lectures on Knot Theory* with subtitle *Selected Lectures presented at the Advanced School and Conference on Knot Theory and its Applications to Physics and Biology*, ICTP, Trieste, Italy, 11 - 29 May 2009; L.H. Kauffman, S. Lambropoulou, J.H. Przytycki, S. Jablan, Eds.; Ser. Knots Everything, vol. 46; World Scientific Press, 2011; pp. 281-320. See also ArXiv.
10. (with L.H. Kauffman) Tangles, Rational Knots and DNA, in *Lectures on Topological Fluid Mechanics*; Lectures given at the C.I.M.E. Summer School held in Cetraro, Italy, July 2-10, 2001, Berger et al., R.L. Ricca Ed.; Lecture Notes in Mathematics, Vol. 1973; Springer, 2009, pp. 99-138 (3rd chapter).
11. (with L.H. Kauffman) The L -move and virtual braids, in *Intelligence of Low Dimensional Topology 2006*; J.S. Carter, S. Kamada, L.H. Kauffman, A. Kawauchi, T. Kohno, Eds.; Ser. Knots Everything, vol. 40; World Sci. Publ. Co., 2007; pp. 133-142.
12. (with J. Juyumaya) p -adic framed braids and p -adic Markov traces”, in *Intelligence of Low Dimensional Topology 2006*; J.S. Carter, S. Kamada, L.H. Kauffman, A. Kawauchi, T. Kohno, Eds.; Ser. Knots Everything, vol. 40; World Sci. Publ. Co., 2007; pp. 75-84.
13. (with L.H. Kauffman) Unknots and DNA, in *Current Developments in Mathematical Biology*; K. Mahdavi, R. Culshaw, J. Bucher Eds.; Ser. Knots Everything, vol. 38; World Sci. Publ. Co., 2007; pp. 39-68.
14. (with J. Juyumaya) p -adic framed braids, in *Proceedings of the 6th Panhellenic Conference in Algebra and Number Theory*, Thessaloniki, June 10-12, 2006; Th. Theohari-Apostolidi, H. Charalambous, Eds.; Aristotle University of Thessaloniki Publ., 2006; pp. 69-80.
15. (with L.H. Kauffman) From tangle fractions to DNA, in *Topology in Molecular Biology; Proceedings of the International Workshop and Seminar on Topology in Condensed Matter Physics*, Dresden, 16-23 June 2002, M. Monastirsky Ed.; Springer Verlag, 2006.

Citations

345 times by 198 authors (MathSciNet)
 1042 (Google Scholar) - including self-references
 h-index=10/18 (Scopus/Google Scholar)

Selected Citations in Monographs and Books (not updated)

1. Kamada, S. “Braid and Knot Theory in Dimension Four”, *Mathematical Surveys and Monographs*, Vol. 95, AMS 2002 (cites 3, 4).
2. Burde, G.; Zieschang, H. “Knots” 2nd revised and extended edition, *Walter de Gruyter Berlin•New York* 2003 (cites 1, 2, 3, 4, 5).

3. Cromwell P. “Knots and Links”, illustrated ed., *Cambridge University Press*, 2004 (cites 7, 8, 9).
4. Jablan, S.; Sazdanovic, R., “LinKnot – Knot Theory by Computer”, *Series Knots Everything*, vol. 21, World Scientific, 2007 (cites 7, 8, 9, 13-arXiv).
5. Kassel, C.; Turaev, V., “Braid groups”, *GTM Springer* 2008 (citations in 2nd edition).

Scientific Administrator of Grants

1. 2012 – 2015: *Algebraic modeling of topological and computational structures and applications*, Research program THALES, MIS 380154, co-financed by Greece & the EU. Involved 56 researchers worldwide. Budget: 540,000 EUR.
2. 2012 – 2014: *Hecke algebras and braid groups associated with complex reflection groups*, program of the General Secretariat of Research and Technology & the EU for the post-doctoral researcher Maria Chlouveraki. Budget: 150,000 EUR.
3. 2010 – 2013: *Topological methods for measuring polymer entanglements*, Research program IRAKLEITOS II of the Greek Ministry of Education & the EU for the doctoral student Eleni Panagiotou. Budget: 45,000 EUR.
4. 2011 – 2012: PEBE2010 basic research grant of the National Technical University of Athens. Budget: 15,000 EUR.
5. 2009 – 2011: PEBE2008 basic research grant of the National Technical University of Athens. Budget: 15,000 EUR.
6. 2006 – 2008: LEUKIPPOS basic research grant of the National Technical University of Athens. Budget: 15,000 EUR.
7. 2002 – 2004: Mathematics Education in Engineering, EC Programme TEMPUS JEP-16119-2001 with the Technical Univ. of Tirana and the Univ. of Trieste. Budget: 220,915 EUR.
8. 1998: Knots in Hellas '98, Euroconferences EC Programme ERBFMMACT980409, Delphi 7-15 August 1998. Budget: 72,000 EUR.

Research Visits by Invitation/after Successful Proposal

1. Research Center in Biodiversity and Genetic Resources, University of Porto, Portugal, 14–19 November 2017 (G. Gomes).
2. Univ. de Versailles (France), 1 March—31 August 2017 (M. Chlouveraki).
3. MF Oberwolfach, Germany, 2 weeks in July 2017 (Research In Pairs with L.H. Kauffman).

4. Univ. of Valparaiso (Chile), 1 week in November 2015 (J. Juyumaya).
5. MF Oberwolfach, Germany, 1 week in April 2015 (Research In Pairs with I. Diamantis and B. Gabrovsek).
6. Univ. de Versailles (France), 1 week in November 2014 (M. Chlouveraki).
7. Minneapolis, USA, 1 week July 2013 (Research collaboration with N.Samardzija).
8. Belgrade University and Serbian Academy of Sciences, Serbia, 1 week in April 2013 (S. Jablan).
9. MF Oberwolfach, Germany, 1 week in February 2013 (Research In Pairs with S. Klaus).
10. MF Oberwolfach, Germany, 1 week in November 2012 (Research In Pairs with S. Klaus).
11. MF Oberwolfach, Germany, 1 week in December 2011 (Research In Pairs with L.H. Kauffman and D. Buck).
12. MF Oberwolfach, Germany, 2 weeks in March 2011 (Research In Pairs with K. Karvounis and S. Chmutov).
13. Abdus Salam School of Mathematical Sciences (ASSMS) Lahore - Pakistan, invited for any duration from 1 month to 1 year (A.D.R. Choudary Director General). Did not realize the visit.
14. MF Oberwolfach, Germany, 2 weeks in July 2010 (Research In Pairs with L.H. Kauffman).
15. Univ. of Valparaiso (Chile), 1 week in December 2010 (J. Juyumaya).
16. Univ. of Valparaiso (Chile), 2 weeks in March 2009 (J. Juyumaya).
17. Univ. of Valparaiso (Chile), 2 weeks in Feb. 2008 (J. Juyumaya).
18. Univ. of Illinois at Chicago (USA), 2 weeks in April 2007 (L.H. Kauffman).
19. Univ. of Illinois at Chicago (USA), 1 week in April 2006 (L.H. Kauffman).
20. MF Oberwolfach, Germany, 2 weeks in July 2005 (Research In Pairs with L.H. Kauffman).
21. Univ. of Illinois at Chicago (USA), 2 weeks in Sept. 2005 (L.H. Kauffman).
22. Univ. of Illinois at Chicago (USA), 2 weeks in Jan. – Feb. 2005 (L.H. Kauffman).
23. Univ. of Valparaiso (Chile), 2 weeks in August 2005 (J. Juyumaya).
24. Univ. of Valparaiso (Chile), 2 weeks in Nov. 2003 (J. Juyumaya).
25. Univ. de Caen (France), 1 month in February 2003 (P. Dehornoy).

26. Univ. of Madison (USA), 1 week in February 2002 (A. Ram).
27. Univ. of Illinois at Chicago (USA), 1 week in November 2001 (L.H. Kauffman).
28. Univ. of Illinois at Chicago (USA), 2 weeks in February 2001 (L.H. Kauffman).
29. Univ. of Illinois at Chicago (USA), 2 weeks in April 2000 (L.H. Kauffman).
30. Max-Planck-Institut für Mathematik, Bonn (Germany), 4 days, April 1999 (A. Stoimenow & F. Hirzebruch).
31. Univ. of Illinois at Chicago (USA), 1 week in October 1999 (L.H. Kauffman).
32. Univ. of Illinois at Chicago (USA), 1 week in April 1999 (L.H. Kauffman).
33. Polish Academy of Science, Warsaw (Poland), 1 week, August 1997 (B. Jakubczyk & P. Traczyk).
34. Univ. de Paris VII Denis Diderot (France), 1 week, Sept 1996 (M. Geck).
35. Univ. de Paris VII Denis Diderot (France), 1 week, June 1996 (M. Geck).
36. Polish Academy of Science, Warsaw (Poland), 2 weeks, March-April 1996 (B. Jakubczyk & P. Traczyk).
37. Göttingen Univ. (Germany), 4 months, May-August 1995 (T. tom Dieck).
38. Göttingen Univ. (Germany), 7 weeks, June-July 1994 (T. tom Dieck).
39. Columbia Univ. N.Y. (USA), 4 weeks, March 1994 (J. Birman).
40. Göttingen Univ. (Germany), 2 weeks, February 1994 (T. tom Dieck).
41. Univ. of Texas at Austin (USA), 5 weeks, April-May 1993 (K. Uhlenbeck & C. Gordon).
42. Odense University (Denmark), 2 weeks, March 1993 (J. Przytycki).

Organizing of Meetings and Workshops

1. Co-organizer of the *First Congress of Greek Mathematicians*, Hellenic Mathematical Society, Athens, Greece, 25–30 June 2018.
2. Member of the Scientific Committee of the 34th Panhellenic Meeting on Mathematical Education, Hellenic Math. Soc., Lefkada, Greece, 3–5 Nov. 2017.
3. Main organizer of the International Conference on *Knots, Low-Dimensional Topology and Applications; Knots in Hellas 2016*, International Olympic Academy (IOA), Greece, 10–16 July 2016. (Co-organizers: V.F.R. Jones, L.H. Kauffman, C. Adams, C. Gordon, K. Millett, J. Przytycki, R. Ricca, R. Sazdanovic.) See TO BHMA science and IOA Journal.

4. 3-day workshop for the dissemination of results of the research project THALES *Algebraic Modeling of Topological and Computational Structures and Applications*, NTUA, Athens, 1–3 July 2015.
5. Co-organizer (with P. Psarrakos, M. Loulakis) the journée *Papafest; 100 years from the birth of C. Papakyriakopoulos*, NTUA, Athens, 22 December 2014.
6. Organized (with A. Arageorgis) a workshop on *Mathematics* for students of the Anavryta experimental high school, NTUA, Athens, 3 February 2012.
7. Co-organizer (with J. Juyumaya, L.H. Kauffman, V.F.R. Jones) of the *1st Joint Meeting of AMS – SOMACHI*, Special Session on *Algebraic Modeling of Knotted Objects*, Pucon, Chile, 15–18 December 2010.
8. Co-organizer (with L.H. Kauffman, J.H. Przytycki, S. Jablan) of the *KNOTS IN CHICAGO*, University of Illinois at Chicago, 10–12 September 2010.
9. Co-organizer (with L.H. Kauffman, J.H. Przytycki, S. Jablan) of the *Advanced School and Conference on Knot Theory and its Applications to Physics and Biology*, ICTP, Trieste, 11–29 May 2009.
10. Main organizer of the *8th Panhellenic Conference in Algebra, Number theory and Applications*, NTUA, 29–31 May 2008.
11. Organized a workshop on *Knot Theory and Applications*, NTUA, November 2006.
12. Organized a workshop on *Knot Theory and Applications*, NTUA, 30 October 2005.
13. Co-organizer (with J. Przytycki and Y. Rong) of the meeting *Knots in Washington XX; 60th birthday of Louis H. Kauffman*, George-Washington Univ., 11–13 February 2005.
14. Member of the International Advisory Board of the *3rd International Workshop Graphs Operads Logic*, Mexico, 2–13 February 2004.
15. Main organizer of the *International Conference in Knot theory and its Ramifications; Knots in Hellas '98*, European Cultural Centre of Delphi, 7–15 August 1998. (Euroconferences Programme of E.C. Co-organizers: V.F.R. Jones, C. Gordon, S. Negrepointis, J. Przytycki.)
16. Organized a workshop on *Braids* within the Conference in *Knot Theory and Low-dimensional Topology*, Warsaw, 17 July–25 August 1995.
17. Co-organized (with T. tom Dieck) a meeting on *Braids, Knots and related Algebra*, SFB 170, Göttingen Univ., 13–16 July 1995.

Co-Editorships

1. Academic editor of the journal *J. Knot theory Ramifications*, World Sci. Press (since 2002).

2. Academic editor of the *Bulletin of the Hellenic Mathematical Society* (since 2016).
3. (with V.F.R. Jones, L.H. Kauffman, C. Adams, C. Gordon, K. Millett, J. Przytycki, R. Ricca, R. Sazdanovic) of the Book at *Springer Proceedings in Mathematics & Statistics (PROMS)* titled “Proceedings of the International Conference Knots in Hellas 2016”.
4. (with V.F.R. Jones, L.H. Kauffman, C. Adams, C. Gordon, K. Millett, J. Przytycki, R. Ricca, R. Sazdanovic) of the special issue of *J. Knot Theory Ramifications* dedicated to the Proceedings of the International Conference Knots in Hellas 2016.
5. (with D. Theodorou, P. Stefanias and L.H. Kauffman) of the book titled *Algebraic Modeling of Topological and Computational Structures and Applications*, THALES, Athens, Greece, July 1-3, 2015, *Springer Proceedings in Mathematics & Statistics (PROMS)*, Vol. 219, 2017; <https://doi.org/10.1007/978-3-319-68103-0>.
6. (with L.H. Kauffman and R. Sazdanovic) of the special issue of *J. Knot Theory Ramifications* 25, No. 9 (2016) 1602002, dedicated to the memory of S. Jablan.
7. (with L.H. Kauffman, J.H. Przytycki, S. Jablan), Proceedings of the Advanced School and Conference on Knot Theory and its Applications to Physics and Biology at the International Centre for Theoretical Physics (ICTP), Trieste, Italy, 11 – 29 May 2009. In *Ser. Knots Everything*, Vol. 46, 2012, World Scientific Press, 520 pages.
8. (with J.H. Przytycki), Proceedings of the International Conference Knots in Washington XX; 60th birthday of Louis H. Kauffman; 11 – 13 February 2005, George Washington University; *Ser. Knots Everything*, Volume 6, in World Scientific, 2011.
9. (with J.H. Przytycki), Proceedings of the International Conference Knots in Washington XX; 60th birthday of Louis H. Kauffman; 11 – 13 February 2005, George Washington University. Volume 5, in *J. Knot Theory Ramifications* 16(10), December 2007, 211 + xi pages.
10. (with J.H. Przytycki), Proceedings of the International Conference Knots in Washington XX; 60th birthday of Louis H. Kauffman; 11 – 13 February 2005, George Washington University. Volume 4, *J. Knot Theory Ramifications* 16(7), September 2007, 159 + xii pages.
11. (with J.H. Przytycki), Proceedings of the International Conference Knots in Washington XX; 60th birthday of Louis H. Kauffman; 11 – 13 February 2005, George Washington University. Volume 3, in *J. Knot Theory Ramifications* 16(3), March 2007, 135 + viii pages.
12. (with J.H. Przytycki), Proceedings of the International Conference Knots in Washington XX; 60th birthday of Louis H. Kauffman; 11 – 13 February 2005, George Washington University. Volume 2, in *J. Knot Theory Ramifications* 15(8), October 2006, 158 + v pages.

13. (with J.H. Przytycki), Proceedings of the International Conference Knots in Washington XX; 60th birthday of Louis H. Kauffman; 11 – 13 February 2005, George Washington University. Volume 1, in *J. Knot Theory Ramifications* 15(6), August 2006, 151 + xii pages.
14. (with V.F.R. Jones, C. Gordon, L.H. Kauffman, J.H. Przytycki), Proceedings of the International Conference “Knots in Hellas 98”, Volume 3, in *J. Knot Theory Ramifications* 10(5), August 2001, 170 pages.
15. (with V.F.R. Jones, C. Gordon, L.H. Kauffman, J.H. Przytycki), Proceedings of the International Conference “Knots in Hellas 98”, Volume 2, in *J. Knot Theory Ramifications* 10(2), March 2001, 175 pages.
16. (with V.F.R. Jones, C. Gordon, L.H. Kauffman, J.H. Przytycki), Conference proceedings “Knots in Hellas 98” with subtitle Proceedings of the Conference on Knot Theory and its Ramifications, in *Ser. Knots Everything*, Vol. 24, 2000, World Scientific Press, 600 pages.

Referee – Reviewer – Evaluator

- Journals: *J. Knot Theory Ramifications*, *Geometry and Topology*, *Topology and its Applications*, *J.reine angew. Math.*, *The Fibonacci Quarterly*, *Banach Centre Publications*, *Moscow Mathematical Journal*, *J. Mathematical Chemistry*, *Discrete Mathematics*, *Rocky Mountain J.*, *Applied General Topology*, *Manuscripta Mathematica*, *Mediterranean J. Mathematics*, *Annali della Scuola Normale Superiore di Pisa*, *Turkish J. Math.*
- NSF panelist for the section “Topology”, Washington DC, February 2005.
- DAAD panelist for the section “Mathematics & Physics”, since 2012.
- Research proposals: NSF, FONDECYT-Chile, U. Patras, Competition of Applied Research and Innovation (SEB-Eurobank), ELIDEK for young researchers, United Arab Emirates U.
- Member of the Examining Committee of the Habilitation of M. Chlouveraki, U. de Versailles, November 2016. Member of Committees for PhD theses, and MSc and Diplom dissertations of the Department of Mathematics of SAMPS and of the School of Electrical Engineering, NTUA.

Participation in Meetings

Invited talks

1. Geometrical Seminar, Vrnjacka banja, Serbia, May 20–23 2018.
2. AMS Spring Sectional meeting in Portland, OR, session on Algebraic and Combinatorial Structures in Knot Theory, April 14–15 2018.

3. 34th Panhellenic Meeting on Mathematical Education, Hellenic Math. Soc., Lefkada, Greece, 3–5 Nov. 2017.
4. Knots in Hellas 2016, Olympic Academy, 10–16 July 2016, Greece.
5. 32nd Panhellenic Meeting on Mathematical Education, Hellenic Math. Soc., 30 Oct.–1 Nov. 2015, Kastoria, Greece.
6. International Congress on Mathematics MICOM-2015, Math. Soc. of South-Eastern Europe and Hellenic Math. Soc., Lecture (with A. Nikolakopoulou) on “The life and work of Christos Papakyriakopoulos”, 22–26 Sept. 2015, Athens, Greece.
7. 18th Symposium on Topological Quantum Information, Univ. of Athens, Greece, 8–10 June 2015.
8. “Knots and Links in Fluid Flows - From Helicity to Knot Energies”, Moscow Independent University, 27–30 April, 2015.
9. Journée “Papafest; 100 years from the birth of C. Papakyriakopoulos”, Lecture (with A. Nikolakopoulou) on “The life and work of Christos Papakyriakopoulos”, NTUA, Athens, 22 December 2014.
10. “Algebraic Structures in Low-Dimensional Topology”, MF Oberwolfach Germany, 26–30 May 2014 (invited participation & talk).
11. “Geometry and Topology, International Conference dedicated to the 75th birthday of Alexei B. Sossinsky”, Moscow Independent University, 8–9 Oct. 2012.
12. International Conference on “Knot Theory and Applications”, Pisa, 2–8 July 2011 (invited speaker).
13. 1st Joint Meeting of AMS – SOMACHI, Special Session on Algebraic modelling of knotted objects, Pucon, Chile, 15–18 December 2010 (co-organizer & invited speaker).
14. Knots in Chicago, University of Illinois at Chicago, 10–12 September 2010 (co-organizer & invited speaker).
15. 26th Panhellenic Conference on Mathematical Education, Greek Math. Soc., Workshop “The Mathematics of everyday life”, Thessaloniki, 13–15 Dec. 2009 (invited speaker).
16. Conference on “Knot Theory and its Applications to Physics and Biology”, ICTP Trieste, 11–29 May 2009 (co-organizer & conference speaker).
17. Workshop “The Mathematics of Knots: Theory and Application”, Mathematics Centre Heidelberg, 15–19 December 2008 (invited speaker).
18. 8th Panhellenic Conference in Algebra and Number Theory, NTUA, Athens, 29–31 May 2008 (with international participation) (main organizer & speaker).

19. Workshop "Invariants in Low-Dimensional Topology", MF Oberwolfach Germany, 4–10 May 2008 (invited participation & talk).
20. AMS/PTM International Meeting, Special Session on Invariants of links and 3-manifolds, Warsaw, Poland, 31 July–3 August 2007.
21. 7th Panhellenic Conference in Algebra and Number Theory, Samos, 31 May–2 June 2007 (with international participation).
22. Knots in Washington XXIV, George Washington Univ., USA, 13–15 April 2007.
23. Intelligent of Low Dimensional Topology 2006, Hiroshima Univ., Japan, 22–27 July 2006 (invited speaker). (Not realized)
24. 6th Panhellenic Conference in Algebra and Number Theory, Thessaloniki, 10–11 June 2006 (with international participation).
25. 1017th AMS Meeting, Special Session on Quantum invariants of knots and 3-Manifolds, Durham, New Hampshire, USA, 22–23 April 2006.
26. Manifolds and their Mappings, 5th International Siegen Topology Symposium, Siegen Univ., Germany, 25–30 July 2005.
27. 2005 AMS-IMS-SIAM Summer Research Conference on Quantum Topology, Snowbird, Utah, USA, 5–9 June 2005.
28. Workshop on Cellular and diagram algebras in mathematics and physics, Mathematical Institute, University of Oxford, UK, 3–9 April 2005.
29. Knots in Washington XX; 60th birthday of Louis H. Kauffman, George Washington Univ., USA, 11–13 February 2005 (co-organizer).
30. 1002nd AMS Meeting, Special Session on Invariants of knots and 3-manifolds, Pittsburgh, Philadelphia, USA, 6–7 November 2004.
31. 1000th AMS Meeting, Special Session on Categories and Operads in Topology, Geometry, Physics and Other Applications, Albuquerque, New Mexico, USA, 15–17 October 2004.
32. 3rd International Workshop Graphs Operads Logic, Mexico, 2–13 February 2004 (plenary speaker).
33. Knots in Poland 2003, Warsaw, Poland, 7–13 July 2003.
34. (invited speaker). - Workshop on Interactions between Representation theory, Knot theory, Topology, Quantum field theory, Category theory and Mathematical Physics, Potsdam Univ., USA, 2–6 June 2003.
35. Workshop on Interactions between Representation theory, Knot theory, Topology and Mathematical Physics, Potsdam Univ., USA, 8–12 July 2002 (inv. speaker).

36. International Workshop and Seminar on Topology in Condensed Matter Physics, Max-Planck-Institut für Physik komplexer Systeme, Dresden, Germany, 16–23 June 2002.
37. 974th AMS meeting, Special Session on Quantum Topology in Dimension Three, Ann Arbor, Michigan, USA, 1–3 March 2002.
38. VII Meeting on Mathematics and Molecular Biology, Santa Fe, New Mexico, 5–10 January 2002 (invited poster).
39. 972nd AMS meeting, Special Session on Quantum Topology, Irvine Univ., California, USA, 10–11 November 2001.
40. 965th AMS meeting, Special Session on Topology of Links, Las Vegas Univ., Nevada, USA, 21–22 April 2001.
41. International Conference on Knots, Links and Manifolds, Siegen Univ., Germany, 5–12 January 2001.
42. International Conference “Knots 2000”, Korea, 31 July–5 August 2000.
43. 954th AMS meeting, Special Session on Quantum Topology, Univ. of Louisiana at Lafayette, USA, 14–16 April 2000.
44. Rencontre “Journées Tresses”, CIRM Marseille-Luminy, France, 8–13 June 1999.
45. 943rd AMS meeting, Special Session on Knots and 3-Manifolds, SUNY Buffalo, USA, 24–25 April 1999.
46. International Conference in Knot theory and its Ramifications; Knots in Hellas ‘98, European Cultural Centre of Delphi, Greece, 7–15 August 1998 (main organizer).
47. International Conference in Knot Theory and Low-dimensional Topology, Tokyo Univ., Japan, 22–31 July 1996.
48. 1st British Women Mathematicians’ meeting, Imperial College, London, U.K., 22 September 1995 (invited speaker).
49. International Conference in Knot Theory and Low-dimensional Topology, S. Banach International Mathematical Centre, Warsaw, Poland, 17 July–25 August 1995.
50. 1st International Joint Meeting of AMS – IMU, Special Session on Braids and Low-dimensional Topology, Hebrew Univ., Israel, 23–26 May 1995.
51. International Conference in Low-dimensional Topology: Knots, 3-manifolds and applications, CIRM Marseille-Luminy, France, 18–22 July 1994.
52. Workshop on Quantum Groups, Bielefeld Univ., Germany, 7–9 July 1994 (invited speaker).
53. 892nd AMS meeting, Special Session on Invariants of Low-dimensional Manifolds III, Brooklyn, N.Y., USA, 8–10 April 1994.

54. Workshop on Conformal Field Theory, Operator Algebras and Low-dimensional Topology, Warwick Univ., U.K., 10–24 August 1993.
55. International meeting on Knots and Links, Siegen Univ., Germany, 18–24 July 1993.
56. Conference on Quantum Topology, Kansas State Univ., USA, 21–27 March 1993.

Selected Invited Participations

1. Workshop "Invariants in Low-Dimensional Topology and Knot Theory", MF Oberwolfach, Germany, 3–9 June 2012.
2. International Conference on "Knot Theory and Algebra", Switzerland, 21–27 May 2011.
3. Workshop on Quantum Topology in Dimension 3, MF Oberwolfach, Germany, 20–25 October 2003.
4. Rencontre " Journées Tresses", CIRM Marseille-Lumini, 11–15 June 2001.
5. Journées Toulousaines, Autour des tresses et des noeds, Univ. Paul Sabatier, Toulouse, 5–8 June 2000.
6. Journée du GDR Tresses du CNRS, Marne-la-Vallee, Paris, 16–18 November 2000.
7. Rencontre "Journées Tresses", CIRM Marseille-Luminy, France, 8–13 June 1999.
8. Conference on Mathematics and Molecular Biology, Santa Fe, New Mexico, 9–14 January 1999.
9. Conference in Low-dimensional topology in honour of J. Birman's 70th birthday, Columbia Univ., NY, 14–16 March 1998.
10. Topologie Meeting, MF Oberwolfach, Germany, 31 August–6 September 1997.
11. Modular Representation Theory meeting, Isaac Newton Institute, Cambridge, 1–6 April 1997.
12. Knotentheorie Meeting, MF Oberwolfach, Germany, 10–16 September 1995.

Selected Seminars and Colloquium Talks

1. Baumann Univ., Moscow, Skype talk in the Topology Seminar, March 2017.
2. EPF Lausanne, Geometry Seminar, 31 March 2015.
3. Sebian Academy of Sciences, 11 April 2013.
4. University of Ioannina, Greece, Colloquium, 18/12/2009.
5. Experimental School of Anavryta, 7/02/2008.

6. University of Thessaloniki, Greece, Algebra Seminar, 13/12/2007.
7. 170 years NTUA, 12/2007.
8. University of Valparaiso (Chile), Colloquium, August 2005.
9. George-Washington University (USA), Colloquium, 05/11/2004.
10. Université de Caen (France), Séminaire Structures Discrètes, 18/02/2003.
11. IRMA, Université Louis Pasteur, Strasbourg (France), Séminaire de Géométrie et Topologie, 01/12/2002.
12. Univ. of Wisconsin, Madison (USA), Topology Seminar and Lie Theory Seminar, 22/02/.2002 and 24/02/2002.
13. Univ. of Illinois at Chicago (USA), Topology Seminars, April 1999, October 1999, April 2000, February 2001, November 2001.
14. Univ. SUNY Buffalo (USA), Topology Seminar, 23/04/1999.
15. Max-Planck-Institut für Mathematik, Bonn (Germany), 09/04/1999.
16. Universität-GH-Siegen, Colloquium, 15/12/1998.
17. Bonn Universität, 02/12/1997 (H. Böttger's Oberseminar).
18. Isaac Newton Institute, Cambridge, April 1997.
19. University of Athens, Greece, Topology Seminar, April 1996.
20. Paris VII (France), 12/06/1996 (Groupe de travail organisé par A. Bruguières, G. Maltsiniotis, G. Masbaum et P. Vogel).
21. J.W.Goethe-Universität, Frankfurt (Germany), Colloquium, 10/11/1995.
22. Göttingen Universität (Germany), Topology Seminars, 21/02/1994, 28/02/1994.
23. Columbia University (USA), Topology Seminars, 01/04/1994.
24. Cambridge University (UK), Topology Seminars, 25/11/1993, 14/11/1994.
25. Univ. of Swansea (UK), Topology Seminar, spring 1994.
26. Austin University, Texas (USA), Topology Seminars, 19/04/1993, 21/04/1993.
27. Odense Univ. (Denmark), Colloquium, 04/03/1993.
28. Warwick University (UK), Topology Seminars, 21/06/1990, 10/10/1991.

1. Researcher’s Night NTUA 2017, NTUA 29 September 2017. Research team desk with title “Knots, Low-dimensional Topology and Applications”.
2. Researcher’s Night NTUA 2016, NTUA 30 September 2016. Research team desk with title “Knots, Low-dimensional Topology and Applications”.
3. Open Doors 2016, School of Applied Mathematical and Physical Sciences, NTUA, 7–8 April 2016.
4. Researcher’s Night NTUA 2015, NTUA 25 September 2015. Poster presentation with title “Extending Topological surgery to natural processes”.
5. Advanced School on “Knot Theory and Applications”, Pisa, 2–13 May 2011, 6 invited lectures (organizer R. Ricca). Did not realize the visit.
6. Advanced School on “Knot Theory and its Applications to Physics and Biology”, ICTP Trieste, 11–29 May 2009, 3 lectures (co-organizer).
7. Summer School, National Technical University of Athens (NTUA), Summer 2008, 1 invited lecture (organizer N. Stavarakakis).
8. U. British Columbia, MSRI-PIMS Summer Graduate Programme: Knots and 3-Manifolds and Knots in Vancouver, 6–21 July 2004, 4 invited lectures (organizer D. Rolfsen).

Postdoctoral Researchers – Students

Post-doc Researchers

1. Demoklis Goundaroulis (2014–2016; since September 2016 Post-doctoral Researcher at the Center for Integrative Genomics, U. Lausanne and SIB Swiss Institute of Bioinformatics, Switzerland)
“A new 2-variable generalization of the Jones polynomial”
2. Ioannis Diamantis (2015; since September 2015 Visiting Prof. International College Beijing, China Agricultural U.)
“The HOMFLYPT skein module of lens spaces $L(p, q)$ via braids”
3. Eleni Panagiotou (2013; since August 2013 Visiting Assist. Prof. U. Santa Barbara California)
“Measuring topological entanglement in polymers”
4. Maria Chlouveraki (2012—2014; since September 2014 CNRS & Maître de Conférences, U. Versailles)
“Hecke algebras and braid groups associated with complex reflection groups”

Ph.D. Students

1. Stathis Antoniou (May 2014 – December 2017)
 “Mathematical modeling through topological surgery and applications”
<http://www.math.ntua.gr/~sofia/dissertations/StathisPhd.pdf>
 Examining Committee: Sofia Lambropoulou, NTUA; Louis H. Kauffman, UIC; Antonios Charalambopoulos, NTUA; Colin Adams, Williams College; Theocharis Apostolatos, UoA; Cameron McA. Gordon, UT Austin; Dimitrios Kodokostas, NTUA.
2. Neslihan Gügümcü (December 2013 – December 2017)
 “On knotoids, braidoids and their applications”
<http://www.math.ntua.gr/~sofia/dissertations/NesliPhd.pdf>
 Examining Committee: Sofia Lambropoulou, NTUA; Louis H. Kauffman, UIC; Dimitrios Kodokostas, NTUA; Vladimir Turaev, Indiana U.; Sam Nelson, Clairmont MC; Oktay Pashaev, Izmir Tech. U.; Paolo Bellingeri, U. Caen.
3. Ioannis Diamantis (November 2007 - December 2014)
 “The HOMFLYPT skein module of lens spaces $L(p, 1)$ via braids”
 Examining Committee: Sofia Lambropoulou, NTUA; Panagiotis Papazoglou, UoA; Josef H. Przytycki, GWU; Cameron McA. Gordon, UT Austin; Themistokles Rassias, NTUA; Epameinondas Kechagias, UoI; Dimitrios Kodokostas, NTUA.
4. Dimokles Goundaroulis (Spring 2007 - January 2014)
 “Framization of the Temperley-Lieb algebra and related link invariants”
www.math.ntua.gr/~sofia/dissertations/goundaroulisThesis.pdf
 Examining Committee: Sofia Lambropoulou, NTUA; Jesus Juyumaya, U. Valparaíso; Aristides Kontogeorgis, UoA; Maria Chlouveraki, Chaire CNRS, U. Versailles; Epaminondas Kechagias, UoI; Panayiotis Psarrakos, NTUA; Themistocles Rassias, NTUA.
5. Eleni Panagiotou (July 2008 - September 2012)
 “Topological methods for measuring the entanglement of polygonal curves”
www.math.ntua.gr/~sofia/dissertations/Panagiotou%20PhD.pdf Examining Committee: Sofia Lambropoulou, NTUA; Doros Theodorou, NTUA; Ken Millett, UCSB; Spiros Argiros, NTUA; Vlassis Mavrantzas, U. Patras; Ioannis Sarantopoulos, NTUA; Antonios Symvonis, NTUA.

M.Sc. Students

1. Chrysostomos Antoniou, “The Alexander polynomial”, May 2016, www.math.ntua.gr/~sofia/dissertations/Antoniou%20MSc.pdf.
2. Eleni Panagiotou, “Topological methods for measuring the entanglement of polymers”, December 2008. Thomaidio Award NTUA for best publication in 2010, www.math.ntua.gr/~sofia/dissertations/Panagiotou%20MSc.pdf.
3. Anastasios Chronopoulos, “The analogues of the 2-variable Jones polynomial for type B knots in the solid torus”, February 2008, www.math.ntua.gr/~sofia/dissertations/Chronopoulos%20MSc.pdf.

4. Ioannis Diamantis, “Applications of Knot Theory in Chemistry and Biology”, Nov. 2007, www.math.ntua.gr/~sofia/dissertations/Diamantis%20MSc.pdf.
5. Konstantina Kominaki, “Applications of Knot theory to electrical networks”, July 2002.

Diploma Students

1. Stefanos Theodorakopoulos “Reed-Solomon codes and basic extensions”, January 2017, <http://www.math.ntua.gr/~sofia/dissertations/StefTheodorakopoulos.pdf>.
2. Petros Pandavos (School of Electrical Engineering) “An introduction to Khovanov homology”, January 2014.
3. Despina Mandratzi “Music and symmetry: the actions of the atonal and the neo-Riemannian group on the set of consonant triads”, December 2013, www.math.ntua.gr/~sofia/dissertations/Mandratzi.pdf.
4. Danai Mantopoulou-Palouka “The braid groups and applications to cryptography and polymers”, July 2013, www.math.ntua.gr/~sofia/dissertations/Mantopoulou.pdf.
5. Evangelia Larentzaki “The prime numbers”, June 2012, www.math.ntua.gr/~sofia/dissertations/Larentzaki.pdf.
6. Vassiliki Bithimitri “Continued fractions and real numbers: approximations and applications”, November 2011, www.math.ntua.gr/~sofia/dissertations/Bithimitri.pdf.
7. Georgios Ninis “Group theory in crystallography”, March 2011, www.math.ntua.gr/~sofia/dissertations/Ninis.pdf.
8. Konstantinos Karvounis “Programming for Yokonuma-Hecke algebras”, Nov. 2010, www.math.ntua.gr/~sofia/dissertations/Karvounis.pdf.
9. Dimitrios Kardaris “Differential Topology in Physics”, July 2010, www.math.ntua.gr/~sofia/dissertations/Kardaris.pdf.
10. Adriani Nikolakopoulou “On Dehn’s Lemma”, July 2010, www.math.ntua.gr/~sofia/dissertations/Nikolakopoulou.pdf.
11. Konstantinos Panagidis “What is Knot Theory in Mathematics: an introduction in HTML and Flash”, (co-supervision with N. Tracas), June 2008, <http://www.math.ntua.gr/~sofia/kostas/>.
12. Ioannis Kiouvrekis “The Banach-Tarski paradox”, June 2008, www.math.ntua.gr/~sofia/dissertations/Kiouvrekis.pdf.
13. Antonis Paterakis “The Theorems of Alexander and Markov in Knot Theory”, May 2008, www.math.ntua.gr/~sofia/dissertations/Paterakis.pdf.

14. Eleni Androulaki “Thermodynamical analysis based on Statistical Mechanics and the Theory of Knots”, March 2008, www.math.ntua.gr/~sofia/dissertations/Androulaki.pdf.
15. Faedra Stavropoulou “Knots and links in graphs and applications to Stereochemical Topology”, October 2007, www.math.ntua.gr/~sofia/dissertations/Faedra.pdf.
16. Evgenia Alexopoulou “ p -adic numbers and an application to Diophantine equations”, June 2007, www.math.ntua.gr/~sofia/dissertations/Alexopoulou.pdf.
17. Eleni Panagiotou “Twelve proofs of the Fundamental Theorem of Algebra”, October 2006, www.math.ntua.gr/~sofia/dissertations/Panagiotou%20presentation.pdf.
18. Konstantinos Eptaimeros “Continuous finite element methods of interior penalty for the biharmonic problem”, October 2006, www.math.ntua.gr/~sofia/dissertations/Eptaimeros.pdf.
19. Anastasios Chronopoulos “An introduction to the theory of knots, the 2-variable Jones polynomial and the classification of the Weyl groups”, October 2005, www.math.ntua.gr/~sofia/dissertations/Chronopoulos.pdf.
20. Kostis Barbagianneris “Knots, braids and Statistical Mechanics”, October 2005, www.math.ntua.gr/~sofia/dissertations/Barbagianneris%20presentation.pdf.
21. Stathis Antoniou “The chaotic attractor of a 3-dimensional Lotka-Volterra dynamical system and its relation to topological surgery”, July 2005, www.math.ntua.gr/~sofia/dissertations/Antoniou.pdf.

Subject “Thema” projects

1. M. Arvaniti & P. Krystallidis, The Platonic solids, 2017, www.math.ntua.gr/~sofia/thema/platonicsolids.pdf.
2. E. Michalopoulou, Mathematics and movies, 2016, www.math.ntua.gr/~sofia/thema/Michalopoulou.pdf.
3. G. Mantzos, The “Keller” Theorem, 2016, www.math.ntua.gr/~sofia/thema/keller.pdf.
4. A. Pouloupoulou, The Mathematics behind the Sudoku game, 2016, www.math.ntua.gr/~sofia/thema/sudoku.pdf.
5. S.M. Bouznean, Knot Applications in DNA, 2016, www.math.ntua.gr/~sofia/thema/Bouznean.pdf.

Teaching

Abroad

- 1990-1991 Supervisions to undergraduate students of mathematics, Warwick U.
- 1991-1992 Example classes in 3rd year Group Theory, Warwick U.
- 1994-1995 Supervisions to 2nd year undergraduates of Christ's College in Linear Mathematics, Cambridge U.
- Spring 1996 Assistant for the 3rd year course: Topologie und Algebraische Topologie, Göttingen U.
- 1996-1997 Assistant for the 1st year course: Analytische Geometrie und Lineare Algebra, Göttingen U.
- 1997-1998 Assistant for the 1st year course: Differenzial- und Integralrechnung I & II, Göttingen U.
- Spring 1998 Reading seminar on topics of Knot theory and 3-manifolds, Göttingen U.
- Fall 1998 Assistant for the 3rd year course Differenzial Geometrie, Göttingen U.
- Spring 1999 Graduate course in Knotentheorie, Göttingen U.
- Fall 1999 Assistant for the 1st year course: Mathematik für Biologen und Geologen, Göttingen U.
- April 2002 Postgraduate mini-course in Knotentheorie, in the framework of the Erasmus EC Programme, Göttingen U.
- Spring 2004 Example classes in Mathematique 1st year, Université Caen.

At the NTUA

- Linear Algebra and Analytic Geometry, 1st semester Mechanical Engineering School (2000), 1st semester Civil Engineering School (2000, 2008, 2009, 2013, 2014, 2015, 2016; since 2017 joined to Analysis and Linear Algebra), 1st semester Mining Engineering School (2009).
- Linear Algebra and Analytic Geometry, 1st semester SAMPS (2001, 2002, 2003, 2004, 2005, 2009, 2011, 2012, 2013, 2014, 2015, 2016, 2017).
- Linear Algebra and Applications, 2nd semester SAMPS (2000, 2001, 2002, 2003, 2005, 2010, 2012).
- Algebra I (introduced the course; originally as optional; now compulsory for the Direction of Studies "Mathematics"), 5th semester SAMPS (2001, 2002, 2003, 2004, 2005, 2007, 2008), renamed to: Algebra and Applications, 7th semester SAMPS (2009-2015). Since 2016 reset to the 5th semester for SAMPS and jointly taught for the 7th semester of the School of Electrical Engineering, NTUA.
- Algebra Seminar for graduates and undergraduates, NTUA (fall 2005, spring 2006). Gave rise to the course:
- Algebra II, 8th semester SAMPS (2010, 2012, 2014, 2015, 2016, 2018).
- Knot Theory and Applications in Physics, Biology, Chemistry and Graph Theory, M.Sc. course at SAMPS (spring 2001, 2006, 2007, 2008, 2010, 2014, 2016).

- Organizer of the ongoing Seminar “Low-dimensional Topology and Applications”, SAMPS, NTUA.

Other Professional Activities

- Member of the University Senate Committee & Coordinator of the ERASMUS+ Student/Staff Exchange Program of SAMPS NTUA.
- Member of the Postgraduate Committee of the Mathematics Department of SAMPS, NTUA.
- Member of the Council of the Hellenic Mathematical Society (March 2017–March 2019)
- Member of the Scientific Users Committee for Zentralblatt/MATH (2011–2016).
- Member of three Selection Committees for positions at the Department of Mathematics of SAMPS, NTUA and member of electing bodies for positions at SAMPS, NTUA.
- Member of the Committee for organizing conferences for the professional orientation of students of SAMPS, NTUA (2002–2003).
- Member of the International Relations Committee of SAMPS and of the NTUA.
- Member of the Educational Excursion Committee of SAMPS, NTUA (2002–2005).
- Member of the M.Sc. Program Committee of the Univ. of Valparaiso, Chile.

Languages

Greek (native speaker), English, German, French.