

**Curriculum Vita**  
**SEMRA (ÖZTÜRK) KAPTANOĞLU**

Home Institution  
Mathematics Department  
Middle East Technical University  
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Bilkent Lojmanlari 104/22  
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Türkiye  
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updated on April 8, 2008

**EDUCATION**

- 1987 – 1995     **Ph.D.**, Mathematics, University of Wisconsin, Madison, WI, USA  
Thesis title : *Local to Global Invariants for G-Modules and G-Spaces*  
Thesis advisor : Prof. Amir Assadi  
Major topics : Algebra; Algebraic Topology, Representation Theory, Group Theory  
Minor : Computer Science
- 1985 – 1987     **M.S.**, Mathematics, Middle East Technical University, Ankara, Türkiye  
Thesis title : *Existence of Normal Complements in Finite Groups*  
Thesis advisor : Prof. İsmail Güloğlu
- 1980 – 1985     **B.S.**, Mathematics, Middle East Technical University, Ankara, Türkiye  
Includes English preparatory school (1980 – 1981)
- 1977 – 1980     Chemistry Technical Lycée, Ankara, Türkiye

**HONORS AND AWARDS**

- 2004            TÜBİTAK-NATO-B2 Postdoctoral Research Fellowship used at Univ. of Virginia, USA
- 1987 – 1991    TÜBİTAK Ph.D. scholarship
- 1987            Turkish Ministry of Education Ph.D. fellowship  
declined in favor of TÜBİTAK scholarship
- 1985 – 1987    TÜBİTAK scholarship
- June 1985      Graduation with the second highest GPA in a class of 60 students  
Mathematics Department, Middle East Technical University
- June 1978      Highest GPA in all chemistry technical lycées in Türkiye
- 1978 – 1980    Turkish Ministry of Education scholarship

**EMPLOYMENT**

- 2005 –            **Assistant Professor**, Mathematics Dept., Middle East Technical University, Ankara, Türkiye
- 2004 – 2005      **Visiting Faculty**, Mathematics Department., University of Virginia, U.S.A.
- 2001 – 2004      **Assistant Professor**, Mathematics Dept., Middle East Technical University, Ankara, Türkiye
- 1995 – 2001      **Instructor**, Mathematics Dept., Middle East Technical University, Ankara, Türkiye
- 1990 – 1995      **Teaching assistant**, Mathematics Dept., University of Wisconsin, Madison, WI, USA
- 1986 – 1987      **Teaching assistant**, Mathematics Dept., Middle East Technical University, Ankara, Türkiye

## PUBLICATIONS

*\*p-Power Points and Moduels of Strongly Constant Jordan Type,*

**In preparation**

*\*Structure and Detection Theorems for  $Z_2 \times Z_4$ -modules,*

**Preprint**

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*\*Betti Numbers of Fixed Point Sets and Multiplicities of Indecomposable Summands,*  
*Journal of Australian Mathematical Society* **74**, 2003, 165–171

*\*A Note on a Theorem of Dwyer and Wilkerson,*  
*Archiv der Mathematik* **76**, 2001, 25–29

*\*Equivalent Conditions for the Existence of Normal Complements,*  
*Int. Journal of Mathematics, Game Theory and Algebra* **9**, 1999, no 4, 269–275

## RESEARCH INTERESTS

I have been intersted in modules over group algebras  $kG$  and spaces with a  $G$ -action for some time, nowadays I am shifting towards modules over finite group schemes, and schemes with a finite group scheme acting on them. Modules arising from  $G$ -actions on spaces, their restrictions to subalgebras of  $kG$  and their interaction with the fixed point sets of the subgroups of the group acting on the space their cohomology via localization theorems in cohomology are among my main interests. Besides, the support variety of a module is a favorite topic for me. Many of the rings coming out of groups such as the group ring, cohomology ring, representation ring, character ring, Burnside ring together with their interactions are sources of excitment for me.

## TEACHING

Undergraduate Courses:

- . 1XX Fundamentals of Mathematics, Basic Algebraic Structures, Analytic Geometry, Calculus I, II,
- . 2XX Basic Linear Algebra, Linear Algebra I, II,
- . 2XX Elementary Geometry,
- . 4XX Elementary Geometric Topology, Rings and Modules

Graduate Courses:

- . 5XX Algebraic Topology I, II
- . 7XX Homological Methods in Topology

## REFEREEING

2005 Gazi Üniversitesi Journal of Science

2004 NSF Post Doctoral Fellowships

2002 Anadolu Üniversitesi Bilim ve Teknoloji Dergisi

## CONFERENCES/VISITINGS

- Mar 31-Apr.4,08 MSRI, Parent Program:Representation Theory of Finite Groups and Related topics,  
Homological Methods in Representation Theory, Berkeley, CA, USA
- March 25 2007 Mathematics Department, Bilkent University, Ankara, Türkiye  
Title of talk:  $p$ -Power Points and Modules of Strongly Constant Jordan Type
- May 22-27 2007 Antalya Algebra Days IX, Antalya, Turkey  
Title of Talk : Modules of Uniform Jordan Type
- Apr.29-May1,07 University of Bielefeld, Bielefeld, Germany  
Representations, Cohomology and Support Spaces
- Dec 9 2006 Topoloji Günü, Atılım Üniversitesi, Matematik Bölümü,  
Title of Talk : Localization in Cohomology
- May 23-25.2005 Institute of Advanced Study, Womens Program 2005,  
Groups and Geometry, Princeton, NJ, USA
- May 20-21 2005 Conference in Honor of R.L. Wilson and J. Lepowsky,  
Lie Algebras , Vertex Operator Algebras, and Their Applications, NCSU, NC, USA
- May 17,19 2005 Mathematics Dept. University of Virginia, Charlottesville, VA, USA  
Operator Theory Seminar; Title of Talk : Extensions of  $C^*$ -algebras I , II
- Mar.25 2005 Colloquium, Galludet University, Washington DC, USA  
Title of Talk : Localization and Fixed Point Sets
- Feb.11 2005 Colloquium, Georgia Southern University, Statesboro, Georgia, USA  
Title of Talk : Betti Numbers of Fixed Point Sets
- Jan5-9 2005 Joint Mathematics Meeting, Atlanta, USA
- Nov.15-17 2004 Algebra Seminar, Mathematics Dept., University of Georgia, Georgia, USA  
Title of Talk : On Modular Representations of Abelian  $p$ -groups of Small Rank
- Sep.16-19 2004 Algebraic Cycles, K-Theory, and Modular Representation Theory in Honor of  
E. Friedlander's 60'th birthday, Northwestern University, Chicago, USA
- Oct. 14 2005 Mathematics Dept. University of Virginia, Charlottesville, VA, USA  
Topology Seminar;  
Title of Talk : Betti Numbers of Fixed Point Sets and Multiplicities of Indecomposable Summands
- Oct.6 2005 Mathematics Dept. University of Virginia, Charlottesville, VA, USA  
Algebra Seminar; Title of Talk : A Detection Theorem for  $Z_2 \times Z_4$ -modules
- Apr.02 2003 Gazi Algebra Day, Gazi Üniversitesi, Ankara, Türkiye
- Sept.20-23 2002 Int. Conference on the Hilbert-Smith conjecture, İstanbul Bilgi Üniversitesi, İstanbul, Türkiye  
Title of talk : Betti Numbers of Fixed Point Sets and Multiplicities of Indecomp. Summands
- June7-13 2002 AMS-IMS-SIAM, Summer Research Institute, Groups, Representations and Cohomology  
Mount Holyoke College, South Hadley, MA, USA
- May21-26 2002 Antalya Cebir Günleri IV, Antalya, Türkiye
- March25 2002 Bilkent Cebir Günü, Ankara, Türkiye
- June25-29 2001 Workshop on Singularity Theory, Feza Gürsey Enstitüsü, İstanbul, Türkiye

- March 2001 Bilkent Cebir Günleri, Bilkent, Ankara, Türkiye
- May17-21 2000 Antalya Cebir Günleri II, Antalya, Türkiye  
Title of talk : Existence of Normal Complements
- May18-23 1999 Antalya Cebir Günleri, Antalya, Türkiye  
Title of talk : Multiplicities of Indecomposable Summands
- May-June 1998 Workshop on Low-dimensional Topology, METU, Türkiye
- July 1997 International Workshop on Number Theory, METU, Türkiye
- July 1996 AMS, Summer Research Institute, Cohomology Representations and Actions of Finite Groups, University of Washington-Seattle, WA, USA  
Title of talk : Numerical Invariants for  $G$ -Modules
- May 1996 5-th Gökova Geometry- Topology Conference, Muğla, Türkiye
- November 1996 Mathematics Symposium Held for the 85 th Birthday of Emeritus Professor Cahit Arf, İstanbul Technical University, İstanbul, Türkiye
- October 1996 Mathematics Department, Bilkent University, Ankara, Türkiye  
Title of talk: Localizations in the Equivariant Cohomology of  $G$ -Spaces
- August 1995 Mathematics Department, The University of Chicago, Chicago, IL USA  
Title of talk : An Extension of Dwyer-Wilkerson's Theorem on the Unstable Part of the Localized Equivariant Cohomology Ring of a  $G$ -Space
- June 1994 3rd International Workshop on Geometry and Arithmetic, Antalya, Türkiye  
Title of talk :  $G$ -Modules,  $G$ -Spaces, and Betti Numbers
- August 1993 International Center for Theoretical Physics, Trieste, Italy
- August 1992 International Workshop on Arithmetic Number Theory, ICTP, Trieste, Italy
- July 1992 1st International Workshop on Geometry and Arithmetic, Antalya Türkiye
- June 1992 Algebraic Topology and Geometric Topology, Northwestern University, Evanston, IL, USA
- May 1992 AMS Joint Meeting on Cohomology of Groups and its Relation to Algebraic Topology, Mount Holyoke College, Mount Holyoke, MA, USA
- January 1991 AMS Annual Meeting, Baltimore, MD, USA

## REFERENCES

- Prof. Amir H. Assadi Math. Dept., Univ. of Wisconsin, Madison, WI 53706 USA
- Prof. Donald Passman Math. Dept., Univ. of Wisconsin, Madison, WI 53706 USA
- Prof. Steve Bauman Math. Dept., Univ. of Wisconsin, Madison, WI 53706 USA
- Prof. İsmail Güloğlu TÜBİTAK-MAM, Gebze., İstanbul/Türkiye
- Prof. Turgut Önder Math. Dept., Middle East Technical Univ., Ankara 06531 Türkiye

## PROFESSIONAL SOCIETIES

- Türk Matematik Derneği
- American Mathematical Society