

LINDA KEEN
Herbert H. Lehman College, City University of New York
Bronx, New York 10468

Education:

B.S., The City College of New York, 1960
M.S., New York University 1962
Ph.D. New York University 1964

Professional Experience

The City University of New York

- Hunter College, Assistant Professor, 1965–1967
- Lehman College, Associate Professor, 1968–1973
- Lehman College, Professor, 1974–present
- Graduate Center Doctoral Faculty in Mathematics, 1966–present
- Graduate Center Doctoral Faculty in Computer Science, 1987–1992

Visiting Positions

- Institute for Advanced Study: Visiting Member, 1964–1965
- University of California, Berkeley Visiting Associate Professor, September–December 1971
- Universität Bonn, Mathematisches Institut, Visiting Member, 1973–1974
- Columbia University, Visiting Professor, 1980–1981
- Research Associate, Instituto de Matematica Pura y Aplicada, C.N.Pq., Rio de Janeiro, Brazil, August–October 1985,
- Member, Mathematical Sciences Research Institute, Berkeley, March 1986, Sept 1992, Jan 1995
- Boston University, Visiting Professor, September 1987–January 1988
- IBM Research Visiting Scientist, Jan–Dec 1988, Aug–Dec 1993
- Max Planck Institut, Member, May–June 1988
- Visiting Professor, Princeton University, September 1989–June 1990
- Visiting Professor, Danish Technical University, June 1990
- Visiting Lecturer, M. I. T., April 1991
- Visiting Professor, Fudan University, May, 1991
- Visiting Professor, SUNY Stonybrook, Spring 1993
- Visiting Scientist, Warwick University, 1988,1990,1992,1993,1996,1997
- Visiting Scientist, Polish Academy of Sciences, March 2000, May 2001

Honors and Awards:

AAUW Postdoctoral Fellowship Award, 1964–65
National Science Foundation Postdoctoral Fellow, 1964–65
AMS Invited hour lecture, Wash DC, 1974
MAA Invited hour address, Boulder CO, 1989
National Science Foundation Visiting Professorship for Women 1989-90
Edwin S. Webster-Abby Rockefeller Mauze Award, M.I.T. 1990
AWM Emmy Noether Lecturer, 1993
Finnish Mathematical Society Invited Foreign Speaker, Jan 1991
Lehman College Foundation Faculty Award, 1998
Lehman College Fellowship Award, 2005

Previous Grants:

National Science Foundation Research Grants: 1966–70; 1973–74; 1977–80;
1985–95, 1996-99
City University of New York Faculty Research Awards: 1971–72; 1977–2004 83;
1985–86, 1993-2004
National Science Foundation - New York City Research Project
Consultant, 1988–91
National Science Foundation SCREMS Grant 1983–85
National Science Foundation AWM Grant 1985–86
National Science Foundation Grant for Bers Colloquium, 1995

Recent and Current Grants:

National Science Foundation CSMES Lehman College Mentoring
and Scholarship Program Award 2001-07
National Science Foundation Award for the Park City Conference on
25 years of Complex Dynamics 2004
IBM-Lehman College Internship Program 1999-2006
PSC-CUNY Research Award 2003-6

Professional Service: Editorial

Member Editorial Board, UME Trends, 1989-91
Member Editorial Board, Journal of Geometric Analysis, 1991–2001
Contributing Editor, Math. Intelligencer, 1990–
Coordinating Editor, Proc. AMS 1993-06
Managing Editor, AMS Journal of Conformal Geometry and Dynamics, 1997-
05, Editorial Board 2005–7
Member Editorial Board, Annales of Finnish Academy of Science 1996–

Professional Service: Administrative

American Mathematical Society

Elected Member at Large of the Council 1981–83
Elected to Nominating Committee 1983–84, Chair 1984
Member Committee on Professional Ethics 1986–89, Chair 1988–89
Member Committee to select speakers for National Meetings 1988–90
Chair, panel to select speakers for Joint AMS–MAA meetings, 1988
Elected to Editorial Boards Committee 1989–1992, Chair 1991
Chair, Satter Prize Committee 1990
Elected Vice President, 1992–95
Member Joint Policy Board on Mathematics 1992–95
Member Science Policy Committee 1992–95
Member Meetings Policy Committee 1992–96
Member Ad Hoc Committee on Governance, 1994
Member Committee to draft a Federal Science Policy Statement, 1994–95
Chair, Committee to write Ethical Guidelines and Procedures for the Committee on Professional Ethics, 1992–96
Elected member Board of Trustees, 1999–2009
Chair, Board of Trustees, 2003
Elected Nominating Committee, 2005–7, Chair 2006

Association for Women in Mathematics

Elected Member of Council 1978–81
President 1985–86
Long Range Planning Committee 1992–93
Nominating Committee 1993
Chair, Louise Hay Prize Committee 1997
Travel grants committee, 1999–2001

Conference Board of the Mathematical Sciences

Elected Member of Executive Committee 1984–86

Mathematics Association of America

Merten Hasse Prize Committee 1990–92

National Science Foundation

Member Panel to select NSF Postdoctoral Fellows, 1981–83
 Chair Oversight Committee, 1983
Member Panel to evaluate NSF SCREMS proposals, 1984–85
Member Panel to select NSF Graduate
 Research Fellows, 1991–93
Member Panel to select NSF Research Training Grant Awardees 2003

National Research Council

Member U. S. National Committee for Mathematics 1990–93
 Chair, 1991–93
U. S. Delegate to International Mathematical Union 1990

Other

Member Steering Committee, International Congress of Mathematicians 1986
Charter Member, Mayor's Commission for Science and Technology of the
 City of New York 1984–1985
Member Panel to select NATO Postdoctoral Fellows 1982
Member Panel to evaluate Mathematics Department, SUNY Potsdam, 1979
Member Panel to evaluate Mathematics Dept, Rutgers, Newark, March 1988
Member Panel to review minority program at Univ Minn April 1988
Board of Trustees, Institute for Pure and Applied Mathematics, UCLA 2006–
2008

University Service: selected

Lehman College, City University of New York

Departmental Personnel and Budget Committee 1982-89,96-05
PSC-CUNY Grants Mathematics Panel 1981-84,2000-04
Departmental Educational Policy Committee 1996-02
Chair, Search Committee for Chief Librarian, 1999-00
Chair, Search Committee for Dean of Natural and Social Science, 1995-96
Co-Chair, Long Range Planning Committee 1991-92
Acting Associate Provost, January 1987–June 87
Coordinator Mathematics Colloquium, Lehman College, 1982-87
Deputy Chairman Department of Mathematics and Computer Science, 1982–86
PSC-CUNY FRAP Award Interdisciplinary Panel, 1985-86
College Committee on the Budget 1982-85
Search Committee for College Librarian, 1983-84

Graduate Center, City University of New York

Mathematics Program Executive Committee, 1997-2008
Doctoral Faculty Policy Committee, 2000-2002
Provost's Advisory Committee, 2000-2003
Coordinator Mathematics Colloquium Graduate Center 1982-83
Committee on Computer Policy, Graduate Center 1978-84
Curriculum and Degree Requirements Committee Graduate Center 1984-86
President's Faculty Advisory Committee, Graduate Center 1983-85
President's Cabinet, Graduate Center, 1984-85
Committee on Committees, Graduate Center, 1988-89

Non-campus based City University of New York

Faculty Advisory Committee to the Research Foundation 2004–6
Ad hoc committees to settle faculty grievances based on arbitration,
1998, 2002 and 2005
Mathematics Liason to University Committee on Research, 1986-89,
Executive Committee, University Committee on Research, 1988

Selected Recent Invited Addresses and Conferences:

1994

AMS Short Course on Complex Dynamics, Cincinnati, OH
Oberwolfach Conference on Complex Analysis
AMS Special Session on Complex Dynamics and Teichmüller
Theory, New York NY
Conference on Parabolic Dynamics, Luminy, France
Park City - IAS Program in Geometry Special Lecture, Princeton NJ

1995

AMS Special Session on Riemann Surfaces and Extremal Problems
San Francisco, CA
AMS Special Session on Complex Dynamics
San Francisco, CA
MSRI Workshop on Hyperbolic geometry
AMS Special Session on Kleinian Groups, Hartford CT
AMS Special Session on Complex Dynamics, Greensboro, NC

1996

AMS Special Session on Discrete Groups, New York, NY

1997

New Zealand Conference on Discrete Groups, Tolaga Bay, NZ
SUNY conference in honor of Irwin Kra
AIM conference in honor of Lars Ahlfors, Stanford, CA

1998

IberoAmerican Congress on Geometry, main conference, Chile
Polish Institute Conference on Complex Dynamics, Warsaw, Poland
Joint Irish and London Mathematical Societies Invited Speaker,
London, England

1999

Arkansas University Conference on Dynamical Systems, Fayetteville, AR
Hebrew University Conference on Riemann Surfaces, Jerusalem, Israel

2001

RIMS Workshop on Complex Dynamics, Kyoto Univ. Kyoto, Japan

2002

Spring Semester in Complex Dynamics, Morningside
Center for Mathematics Beijing, China

2003

AMS special session on Complex Dynamics, Bloomington, Ind
Workshop on Dynamical Systems, Denton TX
Workshop on Kleinian Groups, Newton Institute, Cambridge, UK
Invited speaker at Math Camp for Girls, St Thomas Univ.

2004

AIM Conference on Thompson's Group, Palo Alto, CA
AMS special session on Topology and Teichmüller theory,
USC, Los Angeles CA
Conference on 25 years of Complex Dynamics, Park City Utah
Wesleyan Conference on Kleinian Groups, Wesleyan CT
Workshop on Holomorphic Dynamics, Warwick England

2005

Ahlfors-Bers Conference, Ann Arbor, MI
Conference on Holomorphic Dynamics, Luminy, France

2006

Conference on Teichmüller Theory, Allahabad India
Conference on Holomorphic Dynamics, Toronto, Canada
Conference on Holomorphic Dynamics, Paris, France

Selected Recent Colloquium and Seminar Talks:

1994

Oberlin College Colloquium
Boston University Dynamics Seminar
SUNY Stonybrook Dynamics Seminar

1995

University of Helsinki Colloquium
Bronx Community College Lecture
Organizer, Bers Colloquium at CUNY
CUNY Complex Analysis Seminar

1996

NY Complex Analysis Seminar, SUNY

1997

NY Complex Analysis Seminar, SUNY
Danish Technical University Colloquium
SUNY Stonybrook, Colloquium

1998

Cornell University Complex Analysis Seminar

1999

SUNY Complex Analysis seminar
CUNY Complex Analysis seminar

2000

UConn Complex Analysis seminar
Polish Technical University Colloquium
Polish Institute of Mathematics Dynamical systems seminar
CUNY Complex Analysis seminar

2001

SUNY Stonybrook Complex Analysis seminar
Polish Institute of Mathematics Dynamical systems seminar
SUNY Stonybrook Dynamical Systems seminar

2002

Osaka City University Colloquium
SUNY Stonybrook Dynamical Systems seminar
USC Colloquium
USC Topology Seminar

2003

SUNY Stonybrook Dynamical Systems seminar

2004

Univ of North Carolina Colloquium
SUNY Stonybrook Dynamical Systems seminar

2005

Univ of Toronto Dynamical Systems seminar
Boston University Dynamical Systems seminar

Publications of Linda Keen

1. Canonical Polygons for Finitely Generated Fuchsian Groups. *Acta Mathematica* **115** (1966).
2. Geometric Moduli on Riemann Surfaces. in *Proc. of Conf. on Quasi-Conformal Mappings*, Tulane, 1965.
3. Intrinsic Moduli on Riemann Surfaces. *Annals of Mathematics* **84** #3 (1966), 404–420.
4. An Extremal Length on a Torus. *Journal d'Analyse Mathématique* **XIX** (1967).
5. On Fricke Moduli. *Advances in the Theory of Riemann Surfaces*, Princeton, 1971.
6. On Infinitely Generated Fuchsian Groups. *Journal of the Indian Math. Soc.* **35** (1971).
7. Correction to “On Fricke Moduli,” *Proc. A.M.S.* July 1973.
8. Collars on Riemann Surfaces, *Proc. Conf. on Riemann Surfaces, Univ. of Maryland*, Princeton, 1973.
9. On Fundamental Domains and the Teichmüller Modular Group. In *Contributions to Analysis*, Academic Press, 1974.
10. A Modular Group and Riemann Surfaces of Genus 2, *Math. Zeitschrift* **142** (1975).
11. A Rough Fundamental Domain for Teichmüller Spaces, *Bull A.M.S.* November 1977.
12. On Hyperelliptic Schottky Groups, *Annales Academiae Scientiarum Fennicae* **5** (1980), 165–174.
13. Accessory Parameters and the Uniformization of Punctured Tori, *Proc. of Conf. on Automorphic Forms* Pittsburgh, Pennsylvania, 1978.
14. (With H.E. Rauch and A.T. Vasquez) Moduli of Punctured Tori and the Accessory Parameter of Lamé’s Equation. *Trans. A.M.S.* **225** (November 1979), 201–230.
15. Teichmüller Spaces of Punctured Tori I, *Complex Analysis*, 1983.
16. Teichmüller Spaces of Punctured Tori II, *Complex Analysis*, 1983.
17. Trace Moduli for Quasifuchsian Groups, *J. Math. Kyoto Univ.* **26** #1 (1986).
18. (with L. Goldberg) A Finiteness Theorem for a Dynamical Class of Entire Functions, *J. Ergodic Theory and Dyn. Sys.*, vol 6, 1986.
19. The Dynamics of Holomorphic Self-maps of \mathbf{C}^* , in *Holomorphic Functions and Moduli*, Springer 1988, Ed. D. Drasin et al.
20. Topology and Growth of a Special Class of Holomorphic Self-maps of \mathbf{C}^* . *J. Ergodic Theory and Dyn. Sys.*, vol 9, 1989.
21. (with R. Devaney) Dynamics of Tangent, *Proc. Maryland Special Year in Dynamics*, 1342, Springer 1987

22. (with R. Devaney) Dynamics of Maps with Constant Schwarzian, *Proc. Nevanlinna Colloquium, Joensuu*, 1351, Springer, 1987
23. (with R. Devaney) Dynamics of Meromorphic Functions: Functions with Polynomial Schwarzian Derivative, *Ann. École Normale Supérieure*, 4^e série, t.22, 1989, 55-79
24. Julia Sets, In *Chaos and Fractals: The Mathematics Behind the Computer Graphics* Proc. Symposia in Appl. Math, 39, AMS,1989, Ed. R. Devaney and L. Keen
25. (with L. Goldberg) The Mapping Class Group of a Generic Quadratic Rational Maps and Automorphisms of the 2-Shift, *Invent. Math*,1990, 101, 335-372
26. (with R. Devaney and P. Blanchard) The Dynamics of Complex Polynomials and Automorphisms of the Shift, *Invent. Math*, 1991, 104.
27. Dynamics of Quadratic Polynomials, *Arkhimedes*,1991, 2, 20-33
28. (with C. Series) Pleating Coordinates for Teichmüller Space, *Bull. AMS*,vol. 26, 1, 1992, 141-146
29. (with C. Series) Pleating Coordinates for the Maskit Embedding of Teichmüller space for a punctured torus, *Topology*, Vol. 32, No. 4, pp.719-749, 1993.
30. (with B. Maskit and C. Series) Geometric finiteness and uniqueness for Kleinian groups with circle packing limit sets, *Journal von Reine und Angewandte Math.*, 436, 1993, 209-219.
31. (with C. Series) Pleating Coordinates for the Riley Slice of Schottky Space, *Proc. L.M.S.*, vol.69, part 1 1994, 72-90.
32. Hyperbolic geometry and spaces of Riemann surfaces, *Mathematical Intelligencer*, vol.16, 3, 1994, 11-19.
33. (with C. Series) Continuity of Convex Hull Boundaries, *Pac. J. Math*, vol. 168, 1, 183–206, 1995.
34. Julia Sets of Rational Maps, in *Complex Dynamical Systems*, Proc. Symposia in Appl. Math, 49, AMS,1995, Ed. R. Devaney, 71-89.
35. (with A. Epstein and C. Tresser) The set of maps $F_{a,b} : x \mapsto x + a + \frac{b}{2\pi} \sin(2\pi x)$ with any given rotation interval is contractible, *Comm. Math. Phys.*, 1995.
36. (with J. Kotus) Dynamics of the family $\lambda \tan z$, *J. Conf. Geom. and Dyn.*, 1997, 28–57(electronic)
37. (with J. Kotus) Ergodicity of some classes of meromorphic functions. *Ann. Acad. Sci. Fenn. Math.* 24 (1999), no. 1, 133–145.

38. (with C. Series) How to Bend Pairs of Punctured Tori, in J. Dodziuk and L. Keen editors, *Lipa's Legacy, Proceedings of the Bers Colloquium, 1995*, Contemp. Math. 211, 359-388. AMS 1997.
39. (with F. Gardiner) Holomorphic Motions, *Lipman Bers, selected works parts I and II* Ed. I. Kra, B. Maskit, AMS 1999
40. (with F. Gardiner) Holomorphic motions and quasi-Fuchsian manifolds. Complex geometry of groups (Olm, 1998), 159–174, Contemp. Math., 240, Amer. Math. Soc., Providence, RI, 1999
41. (with J. Parker and C. Series) Combinatorics of simple closed curves on the twice punctured torus. Israel J. Math. 112 (1999), 29–60
42. (with F. Gardiner) Coverings of Cantor sets. In the tradition of Ahlfors and Bers (Stony Brook, NY, 1998), 115–130, Contemp. Math., 256, Amer. Math. Soc., Providence, RI, 2000.
43. (with J. Kotus) On period doubling phenomena and Sharkovskii type ordering for the family $\lambda \tan(z)$. Value distribution theory and complex dynamics (Hong Kong, 2000), 51–78, Contemp. Math., 303, Amer. Math. Soc., Providence, RI, 2002.
44. (with J. Gilman) Word sequences and intersection numbers. Complex manifolds and hyperbolic geometry (Guanajuato, 2001), 231–249, Contemp. Math., 311, Amer. Math. Soc., Providence, RI, 2002
45. (with C. Series) Pleating invariants for quasifuchsian groups: punctured tori, *Topology*, vol 43, no 2, 447-491 2004.
46. (with R.L. Devaney and P. Blanchard) Complex Dynamics and Symbolic Dynamics, Symposia in Appl., 60 Math, AMS (2002) 37–60
47. Complex and Real Dynamics for the family $\lambda \tan(\mathbf{z})$, Proceedings of the Conference on Complex Dynamics, RIMS Kyoto Univ. Oct. 2001, Publ. No 1269 (2002), 93–102
48. (with N. Lakic), Forward Iterated Function Systems, Complex Dynamics and Related Topics, lectures at the Morningside Center of Mathematics, New Studies in Advanced Mathematics, IP Vol 5 2003.
49. (with J. Gilman) Two generator discrete groups: hyperbolic handlebodies, *Geometriae Dedicata*, 110 (2005) 159–190.
50. (with N. Lakic), Random holomorphic iterations and degenerate subdomains, *Proc. AMS*, 134, no. 2, (2006) 371–378
51. (with S. Yuan) Parabolic perturbation of the family $\lambda \tan z$, *Complex Dynamics: 25 years after the appearance of the Mandelbrot set*, Contemp. Math Eds. R. Devaney, L. Keen, to appear 2006
52. (with N. Lakic) Accumulation points of iterated function systems, *Complex Dynamics: 25 years after the appearance of the Mandelbrot set*, Contemp. Math Eds. R. Devaney, L. Keen, to appear, 2006
53. Problems from the sessions at the Snowbird Conference, *Complex Dynamics: 25 years after the appearance of the Mandelbrot set*, Contemp. Math Eds. R. Devaney, L. Keen, to appear, 2006

54. Book Review of *Indra's Pearls*, by D. Mumford, C. Series and D. Wright, Camb. Press, Math. Intelligencer, 2005
55. Featured Review of Hyperbolicity of renormalization of critical circle maps by Michael Yampolsky, Publ. IHES 96, (2003), MR1985030 (2004j:37071)
56. (with J. Gilman) Planar Families of Discrete Groups, to appear, Proc. III Iberoamerican Congress on Geometry, Contemp. Math. 2006.
57. (with N. Lakic) Accumulation constants of iterated function systems with Bloch Target domains, to appear, Annals of Finnish Acad. Sci. 2006

Books:

The Legacy of Sonya Kovalevskaya; Proceedings of a Symposium held at Radcliffe College and 3 AMS special sessions. Ed. L. Keen, Contemp. Math. 64, AMS 1987.

Chaos and Fractals: The Mathematics Behind the Computer Graphics Proc. Symposia in Appl. Math, 39, AMS, 1989, Ed. R. Devaney and L. Keen.

Lipa's Legacy, Proceedings of the Bers Colloquium, Ed. J. Dodziuk, L. Keen, Contemp. Math. 211, AMS 1997

Complex Dynamics: 25 years after the appearance of the Mandelbrot set, Contemp. Math Eds. R. Devaney, L. Keen, to appear, 2006

Conformal Geometry in the small, with N. Lakic, Cambridge Univ. Press, to appear 2006

Historical Articles

On the Life and Work of Sonya Kowaleskaya, AWM Newsletter, March 1977.

Lipman Bers: A Mathematical Mentor, AWM Newsletter, July 1984.

Lipman Bers: 1907-1993, AWM Newsletter, May 1994.

Ph.D. STUDENTS

M. Peter Hofer - A Numerical Approach to the Korteweg-DeVries Equation (1981)

Wei Hua Jiang - The Parameter Space of $\lambda \tan z$ (1991)

Yung-yen Chiang - Pleating Coordinates for the Teichmüller space of a five times punctured sphere (1995)

Dragomir Saric - Complex Earthquakes are holomorphic, (2001)

Reza Chamanara - Automorphism of flat structures in Teichmüller disks, (2002)

Ross Flek - Matings in Dynamics, in preparation

Shenglan Yuan - From the Tangent to the Exponential, in preparation

Kourosh Tavakoli - Limits of Iterated Function Systems, in preparation