

## Y. H. Harris Kwong

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## Education

- 1987 Ph.D. University of Pennsylvania, Mathematics.  
Thesis: *Minimum Periods of Infinite Integer Sequences Generated by Rational Functions Modulo M.*
- 1981 M.S. University of Michigan, Mathematics.
- 1980 B.S. University of Michigan, Mathematics and Statistics (with Distinction).

## Fields of Special Interest

Combinatorics, elementary number theory, graph theory, and algorithms.

## Honors and Awards

- 2010 Honary Member, Golden Key International Honour Society
- 2010 Kasling Award, SUNY Fredonia
- 1987 Good Teaching Award, Mathematics Department, University of Pennsylvania.
- 1985 Fellowship, Mathematics Department, University of Pennsylvania.
- 1980, 79, 77 Class Honors, University of Michigan.
- 1979 James B. Angell Scholar, University of Michigan.

## Teaching Experience

- 1999–present Professor, SUNY Fredonia
- 1992–1999 Associate Professor, SUNY Fredonia
- 1987–92 Assistant Professor, SUNY Fredonia
- 1986–87, 82–85 Teaching Fellow, University of Pennsylvania
- 1980–82 Teaching Assistant, University of Michigan
- 1979–80, 77–78 Instructional Aide, University of Michigan

## Curriculum Development

1. *New Program Developed:* (while as chair of Honors Mathematics Subcommittee)
  - Honors Mathematics Program (Spring 2001).
2. *New Courses Developed:*
  - MAED 325 Software for Mathematics Education (Spring 2004).
  - MATH 290 Sophomore Honors Mathematics (Spring 2002).
  - CS 104 Introduction to Microcomputers (Fall 1989).

3. *Course Revised:*

- MA 125 Software for Mathematics (Spring 1997).

## Doctoral Thesis Committee

1. Pak Kiu Sun, *Incidence coloring: origins, developments and relations with other colorings*, Department of Mathematics, Hong Kong Baptist University, August, 2007.

## Master Thesis Committee

1. Fook Sun Wong, *Full friendly index sets of Cartesian products of cycles and paths*, Department of Mathematics, Hong Kong Baptist University, October 2010.

## Undergraduate Research

1. William Neris, McNair Scholar Program:
  - Research Topic: *Solving Linear Recurrence Relations*, Summer 2004.
  - Presentation: *Solving Linear Recurrence Relations using Generating Function and a Matrix Approach*, at the MathFest 2004, Providence, RI, August 12–14, 2004.
2. Jacob McMillen, honors senior thesis: *Juggling Sequences*, Spring 2005.
  - A presentation at the Spring Meeting of the Seaway Section of MAA at Queens University, Kingston, Ontario, Canada, April 1–2, 2005.
3. Jason Meidenbauer, honors senior thesis: *Topics in Continued Fractions*, Spring 2005.
4. James Wares, honors senior thesis: *Topics in Generalized Fibonacci Sequences*, Fall 2006.
5. James Livsey, honors senior thesis: *Infinite Radicals*, Spring 2008.
6. Megan Cornman, honors senior thesis: *Stirling Numbers and Their Generalizations*, Fall 2009.
7. Erin Parks, honors senior thesis: *Periodicity of the Digits in Fermat Numbers*, Fall 2009.
8. Zachery Teetsel, honors senior thesis: *On Collatz's Conjecture*, Fall 2010.

## Administrative Experience

1. Seaway Section of the Mathematical Association of America:
  - Chair, Harry M. Gehman Lecture Committee, 2002–2005
  - Harry M. Gehman Lecture Committee, 2001–2005.
2. SUNY Fredonia:
  - Chair, Kasling Committee, 2010–present.
  - Natural and Social Sciences and Professional Studies Faculty Research Exposition Committee, 1999–present.
  - Student Computing Access Program (SCAP) Advisory Committee, 1992–96.
3. Department of Mathematical Sciences, SUNY Fredonia:
  - Chair, Honors Program Committee, 2004–present.
  - Mathematics Curriculum Committee, 2004–present.

## 4. Department of Mathematics and Computer Science, SUNY Fredonia:

- Mathematics Search Committee, 2002–03, 1999–2000, 1998–99, 1995–96.
- Chair, Honors Program Committee, 2001–2004.
- Chair, Honors Program Subcommittee, 1999–2001.
- Mathematics Curriculum Committee, 1991–2004.
- Library Committee, 1998–2004.
- Computer Systems and Facilities Committee, 1999–2004.
- Computer Science Advisory Committee, 1992–97, 89–91.
- Computer Science Search Committee, 1995–96.
- Computer Science Curriculum Committee, 1988–91.
- Co-advisor of Mathematics Club, 1988–89.

## 5. Physics Department, SUNY Fredonia:

- Reappointment Committee for Dr. Michael Grady, 1993–94.
- Reappointment Committee for Dr. Justin Conroy, 2008–present.

## 6. Chinese Students Association, University of Michigan:

- President, 1978–79.
- Treasurer, 1977–78.

## Grants Received

2009	Individual Development Awards, Professional Development and Quality of Working Life Committee, New York State/United University Professions.
2004	Individual Development Awards, Professional Development and Quality of Working Life Committee, New York State/United University Professions.
2003	Faculty Fellowship Award, Fredonia College Foundation, SUNY Fredonia.
1998	Individual Development Awards, Professional Development and Quality of Working Life Committee, New York State/United University Professions.
1994	Professional Development Grant, Fredonia College Foundation, SUNY Fredonia.
1994	Continuing Faculty Development Award, Professional Development and Quality of Working Life Committee, New York State/United University Professions.
1990	Release Time Award (Fall 1990).
1987	New Faculty Development Award, Professional Development and Quality of Working Life Committee, New York State/United University Professions.

## Professional and Honorary Organizations

1. Mathematics Association of America.
2. American Mathematical Society.
3. Fellow of the Institute of Combinatorics and Its Applications.

4. Fibonacci Association.
5. Honorary Member, Golden Key International Honour Society.

## Publications

### A. Books Authored

I have written lecture notes for my students. Some of them evolved into full-length textbooks that are used in my classes.

1. *A Spiral Workbook for Discrete Mathematics*. Discussion had been initialized with an international publisher to publish this textbook.
2. *Lecture Notes for Sophomore Honors Mathematics*.
3. *An Introduction to Combinatorics*.
4. *Lecture Notes in Theory of Equations*.
5. *A Brief Introduction to L<sup>A</sup>T<sub>E</sub>X*. This text had been used by graduate students at other universities.

### B. Articles Published/Accepted

1. H. Kwong, S.-M. Lee and H.K. Ng, On product-cordial and friendly index sets of 2-regular graphs and generalized wheels, *Acta Mathematica Sinica, English Series*, to appear.
2. H. Kwong, S.-M. Lee and Y.-C. Wang, On friendly index sets of  $(p, p + 1)$ -graphs, *Journal of Combinatorial Mathematics and Combinatorial Computing*, to appear.
3. M.C. Kong, S.-M. Lee, H.A. Evans and H. Kwong, On balance index sets of generalized wheels, *Journal of Combinatorial Mathematics and Combinatorial Computing*, to appear.
4. H. Kwong and S.-M. Lee, On edge-balance index sets of flower graphs, *Bulletin of the Institute of Combinatorics and its Applications*, to appear.
5. H. Kwong, Evaluating simultaneous integrals, *PRIMUS*, to appear.
6. H. Kwong and M.A. Khan, Some binomial identities associated with the generalized natural number sequence, *Fibonacci Quarterly*, **49** (2011), 57–65.
7. H. Kwong, S.-M. Lee and H.K. Ng, On product-cordial index sets of cylinders, *Congressus Numerantium*, **206** (2010), 139–150.
8. H. Kwong, On recurrence of Fahr and Ringel: an alternate approach, *Fibonacci Quarterly* **48** (2010), 363–365.
9. J. Quaintance and H. Kwong, Permutations and combinations of colored multisets, *Journal of Integer Sequences* **13** (2010), Article 10.2.6.
10. H. Kwong and S.-M. Lee, On edge-balance index sets of generalized theta graphs, *Congressus Numerantium* **198** (2009), 157–168.
11. W. C. Shiu and H. Kwong, An algebraic approach for finding balance index sets, *Australasian Journal of Combinatorics* **45** (2009), 139–155.
12. H. Kwong, S.-M. Lee, S.-P. Lo, H.-H. Su and Y.-C. Wang) On balance index sets of L-Products with cycles and complete graphs, *Journal of Combinatorial Mathematics and Combinatorial Computing* **70** (2009), 85–96.

13. H. Kwong, On balance index sets of rooted trees, *Ars Combinatoria* **91** (2009), 373–382.
14. H. Kwong, S.-M. Lee and H. K. Ng, On friendly index sets of 2-regular graphs, *Discrete Mathematics*, **308** (2008), 5522–5532.
15. H. Kwong, S.-M. Lee and D. G. Sarvate, On balance index sets of one-point unions of graphs, *Journal of Combinatorial Mathematics and Combinatorial Computing*, **66** (2008), 45–58.
16. H. Kwong and S.-M. Lee, On friendly index sets of generalized books, *Journal of Combinatorial Mathematics and Combinatorial Computing*, **66** (2008), 113–127.
17. H. Kwong and W. C. Shiu, Full friendly index sets of  $P_2 \times P_n$ , *Discrete Mathematics*, **308** (2008), 3688–3693.
18. H. Kwong and S.-M. Lee, On balance index sets of chain sum and amalgamation of generalized theta graphs, *Congressus Numerantium*, **187** (2007), 21–32.
19. H. Kwong, Two determinants with Fibonacci and Lucas entries, *Applied Mathematics and Computation*, **194** (2007), 568–571.
20. H. Kwong and S.-M. Lee, On  $Q(a)P(b)$ -super edge-gracefulness of hypercubes, *Journal of Combinatorial Mathematics and Combinatorial Computing*, **62** (2007), 25–34.
21. D. Chopra, H. Kwong, and S.-M. Lee, On edge-magic  $(p, 3p - 1)$ -graphs, *Congressus Numerantium*, **179** (2006), 49–63.
22. H. Kwong and S.-M. Lee, On the integer-magic spectra of the corona of two graphs, *Congressus Numerantium* **174** (2005), 207–222.
23. M. A. Khan and H. Kwong, Arithmetic progressions with square entries, *Fibonacci Quarterly* **43** (2005), 98–103.
24. Y.-H. H. Kwong and A. Tripathi, Some necessary conditions for a real polynomial to have only real roots, *Cruz Mathematicorum with Mathematical Mayhem* **30** (2004), 102–105.
25. H. Kwong, Number of Matchings in an  $n$ -Octahedron, *Bulletin of the Institute of Combinatorics and Its Applications* **21** (1997), 46–48.
26. D. Kuo, G. J. Chang, and Y.-H. H. Kwong, Cordial labeling of  $mK_n$ , *Discrete Mathematics* **169** (1997), 121–131.
27. M. A. Khan and Y.-H. H. Kwong, Some invariant and minima properties of Stirling numbers of the second kind, *Fibonacci Quarterly* **33** (1995), 203–205.
28. Y.-H. H. Kwong and H. J. Straight, An extremal problem involving neighborhood numbers, in *Graph Theory, Combinatorics, and Applications: Proceedings of the Seventh Quadrennial International Conference on the Theory and Applications of Graphs, Volume 2*, 1101–1109, edited by Y. Alavi and A. Schwenk, John Wiley and Sons, New York, 1995.
29. D. K. Garnick, Y.-H. H. Kwong and F. Lazebnik, Algorithmic search for extremal graphs of girth at least five, in *Graph Theory, Combinatorics, and Applications: Proceedings of the Seventh Quadrennial International Conference on the Theory and Applications of Graphs, Volume 2*, 697–709, edited by Y. Alavi and A. Schwenk, John Wiley and Sons, New York, 1995.
30. Y.-H. H. Kwong and D. G. Rogers, A matrix method for counting Hamiltonian cycles on grid graphs, *European Journal of Combinatorics* **15** (1994), 277–283.
31. D. K. Garnick, Y.-H. H. Kwong and F. Lazebnik, Extremal graphs without three-cycles or four-cycles, *Journal of Graph Theory* **17** (1993), 633–645.

32. Y.-H. H. Kwong, Enumeration of Hamiltonian cycles in  $P_4 \times P_n$  and  $P_5 \times P_n$ , *Ars Combinatoria* **33** (1992), 87–96.
33. S. R. Jayaram, Y.-H. H. Kwong and H. J. Straight, Neighborhood sets in graphs, *Indian Journal of Pure and Applied Mathematics* **22** (1991), 259–268.
34. R. Tošić, O. Bodroža, Y.-H. H. Kwong and H. J. Straight, On the number of Hamiltonian cycles of  $P_4 \times P_n$ , *Indian Journal of Pure and Applied Mathematics* **21** (1990), 403–409.
35. Y.-H. H. Kwong Minimum periods of binomial coefficients modulo  $M$ , *Fibonacci Quarterly* **27** (1989), 348–351.
36. Y.-H. H. Kwong, Minimum periods of  $S(n, k)$  modulo  $M$ , *Fibonacci Quarterly* **27** (1989), 217–221.
37. Y.-H. H. Kwong, Minimum periods of partition functions modulo  $M$ , *Utilitas Mathematica* **35** (1989), 3–8.
38. Y.-H. H. Kwong, Periodicities of a class of infinite integer sequences modulo  $M$ , *Journal of Number Theory* **31** (1989), 64–79.

### C. Research Reports

1. D. K. Garnick, Y.-H. H. Kwong and F. Lazebnik, *Extremal Graphs of Girth Five*, Research Report 93-1, Department of Mathematical Sciences, University of Delaware, Newark, Delaware, February 1993.
2. D. K. Garnick, Y.-H. H. Kwong and F. Lazebnik, *Graphs without Three-Cycles or Four-Cycles for each Order from 25 to 200*, Research Report 91-2, Department of Computer Science, Bowdoin College, Brunswick, Maine, August 1991.

### D. Articles Submitted

1. H. Kwong, S.-M. Lee, S.-P. Lo, Hsin-Hao Su and Y.-C. Wang, On uniformly balanced graphs, submitted to *Discrete Mathematics*.

### E. Papers in Preparation

1. H. Kwong, S.-M. Lee, H. K. Ng and Y.-C. Wang, On the edge-cordial index sets of graphs.
2. H. Kwong, Applications of generating functions to a master theorem.
3. H. Kwong, A fascinating summing device.
4. H. Kwong, The sum of powers of the first  $n$  positive integers.

### F. Papers in Progress

1. (with J. Quaintance) A combinatorial interpretation of the Catalan number difference table.
2. (with S.-M. Lee and H. K. Ng) On balance index sets and product-cordial sets of generalized flower graphs.
3. (with S.-M. Lee, H. K. Ng and Y.-C. Wang) On friendly index sets and product-cordial sets of Tutte graphs.
4. (with S.-M. Lee) On edge-balance index sets of some eulerian graphs.
5. (with J. Quaintance), Pattern Avoidance Over Multisets: the Wilf-Class Structure of  $S_4$ .
6. Integer-magic spectra of Fibonacci trees.

7.  $Q(a)P(b)$ -SEG labelings of  $(p, p + 1)$ -graphs.
8. (with S.-M. Lee and L. Valdés) On  $Q(a)P(b)$ -super edge-graceful prisms and Möbius ladders.
9. (with S.-M. Lee) On the super vertex-gracefulness of 2-regular graphs.
10. (with S.-M. Lee) On the super vertex-gracefulness of tensor product of paths and cycles.
11. (with S.-M. Lee, T.-M. Wang and Y.-C. Wang) On the integer-magic spectra of the corona of graphs with null graphs.
12. The max-min sequences.

## G. Miscellaneous

1. Editor of the Problems and Solutions Section of the *New York State Mathematics Teachers' Journal*, 2008–present.
2. 73 review articles published in *Mathematical Reviews*.
3. 84 published solutions to problems proposed in
  - *American Mathematical Monthly*
  - *Mathematics Magazine*
  - *College Mathematics Journal*
  - *Fibonacci Quarterly*
4. 6 proposed problems published:
  - Problem 855: Dizzying Triangles (February 10, 1998), the *Problem of the Week* list distributed by Stan Wagon (wagon@macalester.edu) at Macalester College, St. Paul, MN, over the internet.
  - Problem 742, *College Mathematics Journal*, **34** (2003), 68.
  - Problem B-982, *Fibonacci Quarterly*, **42** (2004), 277.
  - Problem 11280, *American Mathematical Monthly*, **114** (2007), 259.
  - Problem B-1021, *Fibonacci Quarterly*, **44** (2006), 370.
  - Problem 1789, *Mathematics Magazine*, **81** (2008), 64.

## Invited Addresses/Talks

1. *Life After Linear Algebra*, at the Spring Meeting of the Seaway Section, Mathematical Association of America, SUNY Colege at Oswego, Oswego, New York, April 24, 2010.
2. *The Magical World of Graph Labeling*, 34th Robert W. Kasling Memorial Lecture, SUNY Fredonia, Fredonia, NY, October 5, 2010. ‘

## Papers Presented

1. *On Product-Cordial Index Sets of Cylinder Graphs*, at the 41st Southeastern International Conference on Combinatorics, Graph Theory, and Computing, Florida Atlantic University, Boca Raton, FL, March 8–12, 2010.
2. *On Friendly Index Sets of  $(p, p + 1)$ -Graphs*, at the 23rd Midwest Conference on Combinatorics, Cryptography and Computing, Rochester Institute of Technology, Rochester, NY, October 3–4, 2009.
3. *On Edge-Balance Index Sets of Generalized Theta Graphs*, at the 40th Southeastern International Conference on Combinatorics, Graph Theory, and Computing, Florida Atlantic University, Boca Raton, FL, March 2–6, 2009.

4. *On Balance Index Sets of L-Product with Cycles*, at the 21st Midwest Conference on Combinatorics, Cryptography and Computing, College of Charleston, Charleston, SC, October 13–14, 2007.
5. *On Balance Index Sets of Chain Sum and Amalgamation of Generalized Theta Graphs*, at the 38th Southeastern International Conference on Combinatorics, Graph Theory, and Computing, Florida Atlantic University, Boca Raton, FL, March 5–9, 2007.
6. *On Friendly Index Sets of Generalized Books*, at the 19th Midwest Conference on Combinatorics, Cryptography and Computing, at Wichita State University, Wichita, KS, October 5–7, 2006.
7. *On Edge-Magic  $(p, 3p - 1)$ -Graphs*, at the 37th Southeastern International Conference on Combinatorics, Graph Theory, and Computing, Florida Atlantic University, Boca Raton, FL, March 6–10, 2006.
8. *On  $Q(a)P(b)$ -super edge-gracefulness of hypercubes*, at the 19th Midwest Conference on Combinatorics, Cryptography and Computing, at Rochester Institute of Technology, Rochester, NY, October 7–9, 2005.
9. *On the Integer-Magic Spectra of the Corona of Two Graphs*, at the Thirty-Sixth Southeastern International Conference on Combinatorics, Graph Theory, and Computing, Florida Atlantic University, Boca Raton, FL, March 7–11, 2005.
10. *Fibonacci Polynomials*, at the Fall Meeting of Seaway Section, MAA, Canisius College, Buffalo, NY, November 5–6, 2004.
11. *The Transfer Matrix Method for Counting Cycles and Paths on Grid Graphs*, at the Midwest Graph Theory Meeting XXII, Saginaw Valley State University, University Center, MI, May 14, 1994.
12. *A Matrix Approach for Counting Hamiltonian Cycles on Grid Graphs*, at the Eighth Northeast Symposium on Graph Theory and Combinatorics, St. Lawrence University, Canton, NY, October 8–9, 1993.
13. *Extremal Graphs Without Three-Cycles Or Four-Cycles*, at the Seventh International Conference on Graph Theory, Combinatorics, Algorithms and Applications, Western Michigan University, Kalamazoo, MI, June 1–5, 1992.
14. *Neighborhood Sets in Graphs*, at the Midwest Graph Theory Meeting XVI, Wayne State University, Detroit, MI, October 6, 1990.
15. *Periodicities of Integer Sequences*, at the Fall Meeting of the Seaway Section of MAA, Utica College, Utica, NY, November 10–11, 1989.
16. *Number of Hamiltonian Cycles in  $P_4 \times P_n$  and  $P_5 \times P_n$* , at the Second International Conference in Graph Theory, Combinatorics, Algorithms and Applications, San Francisco State University, San Francisco, CA, July 24–28, 1989.
17. *Minimum Period (Modulo  $M$ ) of a Class of Infinite Integer Sequences*, at the Joint Mathematics Meetings of American Mathematical Society & Mathematical Association of America, Atlanta, GA, January 6–9, 1988.

## Talks Presented

1. *On Proudct-Cordial Index Sets of Cylinder Graphs*, at the weekly meeting of the Fredonia Chapter of Sigma Xi, the Scientific Society, March 26, 2010.
2. *Repeating Digits in Fermat's Numbers*, at the weekly meeting of the Fredonia Chapter of Sigma Xi, the Scientific Society, October 2, 2009.

3. *The Fun, Fun, Fun, Fun World of Graph Labelings*, at the weekly meeting of the Fredonia Chapter of Sigma Xi, the Scientific Society, April 28, 2006.
4. *Easy Mathematics*, at the weekly meeting of the Fredonia Chapter of Sigma Xi, the Scientific Society, February 25, 2005.
5. *The Hottest News in Town: Twin Primes*, at the weekly meeting of the Fredonia Chapter of Sigma Xi, the Scientific Society, March 28, 2003.
6. *Two Recent Results in Number Theory*, at the weekly meeting of the Fredonia Chapter of Sigma Xi, the Scientific Society, November 15, 2002.
7. *Proving Mathematical Identities with Computers*, at the Computer Science Colloquia, SUNY College at Fredonia, April 7, 2000.
8. *How to Guess the Secret Number*, at the weekly meeting of the Fredonia Chapter of Sigma Xi, the Scientific Society, March 17, 2000.
9. *Graph Polynomials*, at the weekly meeting of the Fredonia Chapter of Sigma Xi, the Scientific Society, March 20, 1998.
10. *Computer Proofs of Mathematical Identities*, at the weekly meeting of the Fredonia Chapter of Sigma Xi, the Scientific Society, April 26, 1996.
11. *Ramsey Numbers*, at the weekly meeting of the Fredonia Chapter of Sigma Xi, the Scientific Society, November 12, 1993.
12. *Generating Functions and Exponential Formula*, at the State University College at Buffalo (as part of the Western New York Mathematical Lecture Consortium), December 8, 1988.
13. *Bijjective Proofs*, at the weekly meeting of the Fredonia Chapter of Sigma Xi, the Scientific Research Society, April 22, 1988.

## Meetings and Special Sessions Organized

1. Special Session on Combinatorics and Graph Theory, American Mathematics Society Sectional Meeting, University of Buffalo, Buffalo, NY, April 24–25, 1999.

## Review and Referee

1. Review articles for *Mathematical Reviews*: 72 reviews have appeared as of October 2010.
2. Referee articles for 18 professional journals:
  - *Mathematics Magazine*
  - *Discrete Mathematics*
  - *Discrete Applied Mathematics*
  - *Graphs and Combinatorics*
  - *Journal of Integer Sequences*
  - *Applied Mathematics and Computation*
  - *Acta Mathematica Sinica (English Series)*
  - *International Journal of Mathematics and Mathematical Sciences*
  - *Fibonacci Quarterly*
  - *Ars Combinatoria*
  - *Utilitas Mathematica*
  - *Journal of Combinatorial Mathematics and Combinatorial Computing*
  - *Applied Mathematics Letters*

- *Bulletin of the Institute of Combinatorics and Its Applications*
- *Discussiones Mathematicae Graph Theory*
- *Hacettepe Journal of Mathematics and Statistics*
- *Journal of the Egyptian Mathematical Society*
- *New York State Mathematics Teachers' Journal*

3. Reviewed computer science textbook manuscripts for West Publishing Company.