

Curriculum Vitae

Personal Data :

Name : Timothy Shane Norfolk

Professional Address :

Department of Mathematics,
The University of Akron,
Akron, Ohio 44325-4002.

Permanent Address :

742 Albert Horning Road,
Atwater, Ohio 44201.

Telephone :

Office : (330) 972-8018

Home : (330) 947-2224

E-Mail Address :

Office : norfolk@uakron.edu

Home : Timsn274@aol.com

Website :

www.math.uakron.edu/~norfolk

Personal Data :

Birthdate : March 17th, 1957

Birthplace : Rochford, Essex, United Kingdom

Citizenship Status : U.S.

Marital Status : Married, three children

Education :

Ph.D. – Kent State University, May 1984

Numerical Analysis and Approximation Theory

M.S. – The University of Akron, May 1980

Applied Mathematics

B.Sc. – Exeter University, June 1978

Mathematics

Professional Experience :

6-10 to Present: Professor of Mathematics, Interim Chair, Department of Mathematics, The University of Akron. Damage control.

12-06 to 6-10 : Professor of Mathematics, Department of Theoretical and Applied Mathematics, The University of Akron. Instruction.

8-01 to 12-06 : Professor of Mathematics, Associate Chair, Department of Theoretical and Applied Mathematics, The University of Akron. Instruction and administration.

6-00 to 8-01 : Professor of Mathematics, Mathematics Division Coordinator and Associate Chair, Department of Mathematics and Computer Science, The University of Akron. Instruction and administration.

9-98 to 5-00 : Professor of Mathematics, Mathematics Division Coordinator, The University of Akron. Instruction and administration.

9-96 to 8-98 : Professor of Mathematical Sciences, The University of Akron. Full-time instruction.

9-89 to 8-96 : Associate Professor of Mathematical Sciences, The University of Akron. Full-time instruction.

1-84 to 8-89 : Assistant Professor of Mathematical Sciences, The University of Akron. Full-time instruction.

9-82 to 12-83 : Research Fellowship in Numerical Analysis, Kent State University. Supported by the Air Force Office of Scientific Research.

Summer 1982 : Research Fellowship in Symbolic and Numerical Computing, Kent State University. Supported by the Department of Energy.

9-80 to 5-82 : Teaching Fellowship in Mathematics, Kent State University.

Summer 1980 : Part-time Instructor of Mathematics, The University of Akron.

9-79 to 5-80 : Teaching Assistantship in Mathematics, The University of Akron.

Summer 1979 : Part-time Instructor of Mathematics, The University of Akron.

9-78 to 5-79 : Teaching Assistantship in Mathematics, The University of Akron.

Scholarly Publications :

1. Timothy S. Norfolk, "Symbolic Computation of Residues at Poles and Essential Singularities", *Sigsam Bulletin*, Vol. 16, No. 1, Feb. 1982, pp. 17-23.
2. George Csordas, Timothy S. Norfolk and Richard S. Varga, "The Riemann Hypothesis and the Turán Inequalities", *Transactions of the American Mathematical Society*, Vol. 296, No. 2, Aug. 1986, pp. 521-541.
3. George Csordas, Timothy S. Norfolk and Richard S. Varga, "A Lower Bound for the de Bruijn-Newman Constant Λ ", *Numerische Mathematik*, Vol. 52, 1988, pp. 483-497.
4. Timothy S. Norfolk, "Some Observations on the Saff-Varga Width Conjecture", *The Rocky Mountain Journal of Mathematics*, Vol. 21, Winter 1991, pp. 529-538.
5. Timothy S. Norfolk, Arden Ruttan and Richard S. Varga, "A Lower Bound for the de Bruijn-Newman Constant Λ . II", *Progress in Approximation Theory*, Computational Mathematics Series, Vol. 17, Springer-Verlag 1992, pp. 403-418.
6. Isadore Newman, John W. Fraas and Timothy S. Norfolk, "A Binomial Index of Model Fit : An Elaboration", *Journal of Structural Equation Modeling : A Multidisciplinary Journal*, Vol. 2, No. 2, 1995, pp. 155-162.

7. Timothy S. Norfolk, “Zero-Free Regions for Sequences of Maclaurin Polynomials”, *Analysis*, Vol. 16, 1996, pp. 51–64.
8. Timothy S. Norfolk, “On the Zeros of the Partial Sums to ${}_1F_1(1; b; z)$ ”, *Journal of Mathematical Analysis & Applications*, **218**, 1998, pp. 421–438.
9. Timothy S. Norfolk, “Asymptotics of the Partial Sums of a Set of Integral transforms”, *Numerical Algorithms*, **25**:279–291, 2000.
10. Timothy S. Norfolk, “When Does a Metric Generate Convex Balls?”, <http://www.math.uakron.edu/~norfolk>.
11. Timothy S. Norfolk and R.U. Verma, “Generalized System for Relaxed Co-coersive Nonlinear Variational Inequality Problems”, *Journal of Applied Functional Analysis*, Vol. 1, No. 4, 2006, pp. 461–468.
12. David M. Einstein, Christopher C. Checkman and Timothy S. Norfolk, “On Sara’s Dove Bar Habit”, *The American Mathematical Monthly*, Vol. 116, No. 9, November 2009, pp. 831–835.
13. Svante Janson and Timothy S. Norfolk, “Zeros of Sections of the Binomial Expansion”, *Electronic Transactions on Numerical Analysis*, Vol. 36, December 2009, pp. 27–38.
14. Yucheng Zhang, Ping Yi, Kevin L. Kreider, Chun Shao and Timothy S. Norfolk, “Modeling Network Impact in the Surrounding Area of Activity Due to Special Events”, *Transportation Research Board 89th Meeting*, Vol. 2183, 2010, pp. 78–84.
15. Erin McGough, Curtis Clemons, Michael Ferrara, Timothy Norfolk, Gerald W. Young, “A Game-Theoretic Approach to Personnel Decisions in American Football”, *J. of Quantitative Analysis in Sports*, Vol. 6, No. 4, Article 1, October 2010.
16. E.Y.G. Chen, E. Pan, T.S. Norfolk, Q. Wang, “Surface Loading of a Viscoelastic Pavement”, *Road Materials and Pavement Design*, Vol. 12, No. 4, October–December 2011, pp. 849–874.

Technical Reports :

1. Timothy S. Norfolk, Arden Ruttan and Richard S. Varga, “A Detailed Examination of the Tracking of the Zeros of $F_\Lambda(z)$ to Produce a Lower Bound for the de Bruijn-Newman Constant Λ ”, Institute for Computational Mathematics, Kent State University Report Number ICM-9011-04, 1992.

Other Publications :

1. Timothy S. Norfolk, “A Mathematician’s Apology? It’s Time to Stop”, *FOCUS*, February 1997, pp. 14–15.
2. Timothy S. Norfolk, “A Mathematician’s Apology? It’s Time to Stop”, reprinted in *Virginia Mathematics Teacher*, Vol. 24, No. 1, Fall 1997, pp. 8–9.
3. Timothy S. Norfolk, “Mailer meets God”, letter to the editor, *Playboy magazine*, March 2008.
4. Timothy S. Norfolk, “Why I became an American”, *Ravenna Record Courier*, April 29, 2008.
5. Timothy S. Norfolk, “Standards and Teaching”, *Academe Online*, September–October 2008.
6. Timothy S. Norfolk, “Is Ralston Right?”, *MAA Focus*, October 2008.
7. Timothy S. Norfolk, “Poor Algebra Preparation, Once Again”, *MAA Focus*, December 2009–January 2010.
8. Timothy S. Norfolk, “The problem with math education”, *The Answer Sheet blog*, *The Washington Post*, January 13, 2012.
http://www.washingtonpost.com/blogs/answer-sheet/post/the-problem-with-math-education/2012/01/12/gIQAbhx5vP_blog.html

Theses and Papers Directed :

1. Swie T. Lie, “Chebyshev Interpolation”, a Master’s paper presented to the Department of Mathematical Sciences, The University of Akron, May 1986.

2. J. Dorairaj, “Query Optimization Techniques For Distributed Database Systems”, a Master’s paper presented to the Department of Mathematical Sciences, The University of Akron, May 1995.
3. David A. Stroup, “Collatz’s Problem and Encoding Vectors”, a Master’s thesis presented to the Graduate School, The University of Akron, May 2006.
4. Sandra Fink, “Mathematical Analysis of Blackjack Counting Systems”, a Master’s paper presented to the Department of Theoretical and Applied Mathematics, The University of Akron, December 2007.
5. Kyle Terakedis, “Forced Decisions in a Multi-Street Game”, a Master’s paper presented to the Department of Theoretical and Applied Mathematics, The University of Akron, May 2008.
6. Rachelle Gallo, “A Game-Theoretic Model of Contraceptive Costs”, senior Honors project, December 2010.
7. Mary Zitnik (with Curtis Clemons and Gerry Young), “A Game Theoretic Approach to Advertising Strategy”, a Master’s thesis presented to the Department of Theoretical and Applied Mathematics, The University of Akron, December 2010.
8. Adam Martinez, “A Geometric Tiling Algorithm for Approximating Minimal Covering Sets”, a Master’s thesis presented to the Department of Mathematics, The University of Akron, December 2011.
9. Jon Hafner, “Evolving a Genetic Algorithm for Network Flow Optimization”, a Master’s thesis presented to the Department of Mathematics, The University of Akron, April 2012.

Fellowships and Grants :

1. Research Fellowship in Scientific and Numerical Computing, sponsored by the Air Force Office of Scientific Research and the Department of Energy, June 1982–December 1983.

2. Co-investigator NSF grant DMS-86-04047, with B. Greenspan, A. Hajjafar, S. I. Hariharan, L. Krishna, G. Kunze (Geology), D.P. Story and G. Young, September 1986.
3. Support under the Ohio Board of Regents Research Challenge, with Dr. K. Mudry (Biomedical Engineering), May–June 1987.
4. Support from Cray Corporation, for work on the de Bruijn-Newman Constant Λ , through Kent State University, June–July 1988.
5. Member of NEOCEX team on mathematics teacher education, Summer 2003, supported by the Center of Excellence.

Professional Presentations and Meetings :

1. “Subgradients and Optimization”, presented at the MAA Regional Spring Meeting, Wittenberg University, Wittenberg, Ohio, April 1980.
2. Participant : Conference on Padé and Rational Approximation [UK/US], The University of South Florida, Tampa, Florida, December 1983.
3. “On the Zeros and Poles of Padé Approximants”, presented at the MAA Regional Spring Meeting, Bowling Green State University, Bowling Green, Ohio, April 1984.
4. “On the Zeros and Poles of Padé Approximants”, presented at the SIAM (Local Section) Meeting, Kent State University, Kent, Ohio, October 1984.
5. Coordinator of Student Paper Session : MAA Regional Spring Meeting, The University of Akron, Akron, Ohio, April 1985.
6. “Some Observations on the Saff-Varga Width Conjecture”, presented at the U.S./Norway Joint Seminar on Padé Approximants and Related Topics, The University of Colorado at Boulder, Boulder, Colorado, June 1988.
7. Participant : Conference on Approximation Theory and Numerical Linear Algebra, in honor of Richard S. Varga on the occasion of his 60th birthday, Kent State University, Kent, Ohio, March 1989.

8. “The Mathematical Method”, presented at the Third Annual Region IV Mu Alpha Theta Convention, St. Vincent-St. Mary High School, Akron, Ohio, December 1993.
9. “Zero-Free Regions of Entire Functions”, presented at the Department of Mathematical Sciences Colloquium, The University of Akron, Akron, Ohio, September 1994.
10. “Application of the Binomial Index of Model Fit : What Research Question is being investigated?”, Isadore Newman, John W. Fraas and Timothy S. Norfolk, presented by I. Newman at the Meeting of the Mid-Western Educational Research Association, Chicago, Illinois, October 1994.
11. Participant : Ninth Annual International Conference on Technology in Collegiate Mathematics, Reno, Nevada, November 1996.
12. Participant : History of Mathematics Conference, Akron, Ohio, April 1997.
13. “Asymptotics of the Partial Sums of a Set of Integral Transforms”, invited presentation at *A Mathematical Journey through Analysis, Matrix Theory and Scientific Computation*, a conference in honour of Richard S. Varga’s 70th birthday, Kent State University, March 1999.
14. Participant : McGraw-Hill Calculus Symposium, Key West, Florida, February 2002.
15. “Parrondo’s Paradox : What is a Favourable Game?”, presented at the Department of Theoretical and Applied Mathematics seminar, October 2002.
16. “Parrondo’s Paradox : What is a Favourable Game?”, presented at the G.A.M.E.S. Fall Meeting, Akron, November 2002.
17. Participant : James Randi Educational Foundation’s Amazing Meeting II, conference on the paranormal, Las Vegas, Nevada, January 2004.
18. Progress report : NEOCEX meeting, Kent State University, April 2004.

19. “Zeros of Sections of the Binomial Expansion”, Conference on the Occasion of Richard Varga’s 80th Birthday, Kent State University, October 2008.
20. “Simple Game Theory”, presented at the G.A.M.E.S. Spring Meeting, Archbishop Hoban High School, Akron, Ohio, January 2010.

Miscellaneous Scholarly Activity :

• *Referee and Editorial Services :*

1. Copy Editing and language revision on “Nonlinear Approximation”, D. Braess, Springer Series in Computational Mathematics, 7, 1986.
2. Copy Editing and language revision on “A History of Continued Fractions and Padé Approximants”, C. Brezinski, Springer Series in Computational Mathematics, 12, 1990.
3. Copy Editing and language revision on “Sequence Transformations”, J. P. Delahaye, Springer Series in Computational Mathematics, 11, 1988.
4. Referee for *The Journal of the Franklin Institute*.
5. Referee for *Proceedings of the American Mathematical Society*.
6. Referee for *The Rocky Mountain Journal of Mathematics*.
7. Referee for *Computers in Physics*.
8. Referee for *The Journal of Mathematical Analysis & Applications*.
9. Referee for *Numerische Mathematik*.
10. Referee for *Math. Reviews*.
11. Referee for *Computers and Mathematics with Applications*.
12. Reviewer for *McGraw-Hill*.
13. Reviewer for NSF proposals.
14. Reviewer for *Linear Algebra and its Applications*.
15. Referee for *Proceedings of the American Mathematical Society*.
16. Referee for *Journal of the Franklin Institute*.

- *American Mathematical Monthly Problems : Solutions published*
 1. E2921 (*89*, No. 1, January 1982, p. 63) in *93*, No. 6, June–July 1986, pp. 482–483.
 2. E3393 (*97*, No. 6, June–July 1990, p. 528), in *99*, No. 4, April 1992, pp. 363–364.
- *American Mathematical Monthly Problems : Solutions acknowledged*
 1. Advanced Problem 6375 (*89*, No. 1, January 1982, p. 65), in *90*, No. 8, October 1983, p. 572.
 2. Advanced Problem 6387 (*89*, No. 5, May 1982, p. 338), in *90*, No. 10, December 1983, p. 711.
 3. Advanced Problem 6501 (*92*, No. 8, October 1985, p. 595), in *94*, No. 4, April 1987, p. 390.
 4. Advanced Problem 6504 (*92*, No. 9, November 1985, p. 670), in *94*, No. 5, May 1987, pp. 473–474.
 5. E3088 (*92*, No. 5, May 1985, p. 359), in *94*, No. 7, August–September 1987, pp. 685–687.
 6. E3099 (*92*, No. 7, August–September 1985, p. 507), in *94*, No. 10, December 1987, pp. 1003–1004.
 7. E3111 (*92*, No. 9, November 1985, p. 665), in *96*, No. 6, June–July 1987, pp. 556–557.
 8. E3210 (*94*, No. 5, May 1987, p. 457), in *95*, No. 9, November 1988, pp. 879–880.
 9. E3209 (*94*, No. 5, May 1987, p. 457), in *96*, No. 3, March 1989, pp. 261–262.
 10. E3214 (*94*, No. 6, June–July 1987, p. 548), in *96*, No. 8, October 1989, pp. 739–741.
 11. E3272 (*95*, No. 6, June–July 1988, p. 555), in *96*, No. 9, November 1989, pp. 845–846.
 12. E3225 (*94*, No. 8, October 1987, p. 786), in *97*, No. 2, February 1990, pp. 154–156.
 13. E3300 (*95*, No. 10, December 1988, p. 954), in *97*, No. 3, April 1990, pp. 251–252.

14. E3289 (*95*, No. 9, November 1988, p. 872), in *97*, No. 4, April 1990, p. 346.
15. E3291 (*95*, No. 9, November 1988, p. 872), in *97*, No. 4, April 1990, pp. 346–347.
16. E3290 (*95*, No. 9, November 1988, p. 872), in *97*, No. 5, May 1990, pp. 428–429.
17. E3317 (*96*, No. 3, March 1989, p. 254), in *97*, No. 7, August–September 1990, pp. 618–619.
18. E3316 (*96*, No. 3, March 1989, p. 254), in *97*, No. 9, November 1990, pp. 852–853.
19. E3364 (*97*, No. 1, January 1990, p. 64), in *98*, No. 5, May 1991, pp. 444–445.
20. E3362 (*97*, No. 1, January 1990, p. 63), in *98*, No. 8, October 1991, p. 763.
21. E3368 (*97*, No. 2, February 1990, p. 150), in *98*, No. 8, October 1991, pp. 763–764.
22. E3383 (*97*, No. 4, April 1990, p. 343), in *98*, No. 9, November 1991, pp. 857–858.
23. E3389 (*97*, No. 5, May 1990, p. 428), in *98*, No. 9, November 1991, pp. 859–860.
24. E3374 (*97*, No. 3, March 1990, p. 239), in *98*, No. 10, December 1991, p. 961.
25. E3384 (*97*, No. 5, May 1990, p. 427), in *98*, No. 10, December 1991, pp. 961–962.
26. E3363 (*97*, No. 1, January 1990, p. 63), in *99*, No. 2, February 1992, pp. 163–164.
27. E3381 (*97*, No. 4, April 1990, pp. 342–343), in *99*, No. 2, February 1992, pp. 165–166.
28. 10688 (*105*, No. 8, October 1998, p. 769), in *107*, No. 2, February 2000, pp. 181–182.

- *Expert Witness in Criminal and Civil Trials* :

1. For Frank Pignatelli, Esq., of Emershaw, Mushkat and Schneier, Akron, Ohio, May 1997.
2. For George Music Inc., Akron, Ohio, October 1998.

- *Consulting* :

1. For the Civil Service Personnel Association, Inc., May 1999.

Courses Taught at the University of Akron :

- Elementary Algebra – 3450:101
- Modern University Mathematics (M.U.M.) – 3450:111–114, 121–123, 138
- Mathematics for Elementary Teachers – 3450:140
- Algebra with Business Applications – 3450:141
- Elementary Functions I and II – 3450:147–148
- PreCalculus – 3450:149
- Introduction to Discrete Mathematics – 3450:208
- Calculus for the Life Sciences I and II – 3450:211–212
- Concepts of Calculus I – 3450:215
- Analytical Geometry I, II and III – 3450:221–223
- Differential Equations – 3450:235
- Fundamentals of Advanced Mathematics – 3450:307
- Linear Algebra – 3450:312
- Combinatorics and Graph Theory – 3450:415/515
- Advanced Calculus I and II – 3450:421–422

- Complex Variables – 3450:425/525
- Introduction to Numerical Analysis – 3450:427/527
- Numerical Linear Algebra – 3450:428/528
- Mathematical Models – 3450:436/536
- Workshop : Mathematics and Casino Gambling – 3450:491/591
- Introduction to Analysis – 3450:601
- Real Analysis – 3450:621
- Analytic Function Theory – 3450:625
- Optimization – 3450:635
- Advanced Combinatorics and Graph Theory – 3450:636
- Computer Programming I and II – 3460:209–210
- Discrete Structures – 3460:418/518

Department Service :

- PreCalculus Committee : 2009
- Distinguished Professor Guidelines Committee : 2008
- Reader for several Master’s papers and theses
- Coach, Putnam Mathematical Competition Team : 1985–present
- Guidelines Committee : 1993–1994, 2007–2008
- PreCalculus Textbook Committee : 1994–1995, 2000–2001, 2007
- OCTM Site Director : 2001–2007
- College Lecturer Search Committee : 2006, 2007
- Chair, College Lecturer Evaluation Committee : 2006–2007

- Mathematics Committee : 1985–2006
- Chair, Committee on Algebra Reform in Education : 2006
- Department Recording Secretary : 1999–2003
- Secretary, Committee on Promotion to Professor, 1996–1997, 2000–2001, 2001–2002, 2009–2010, 2010–2010
- Mathematics Division Coordinator : 1999–2001
- Move Committee : 1997–1999
- Chair, Committee on Promotion to Associate Professor : 1998–1999
- Applied Mathematics Senior Position Search Committee : 1998–1999
- Evaluation Committee : 1998–1999
- Ad Hoc Committee to review the Master’s degree program in Mathematics : 1998–1999
- Guidelines Reference Committee : 1999
- Chair, Department Chair Search Committee : Fall 1999
- OCTM Proctor : 1998
- Calculus and Differential Equations Goals and Outcome Assessment Committee : 1998
- Secretary, Mathematics Division : 1991–1997
- Chair, Appeals Sub-committee on Promotion to Associate Professor : 1997
- Numerical Analysis review Committee : 1995–1996
- Chair, Department Colloquium Committee : 1994–1995
- Mathematics Representative, Department Colloquium Committee : 1991–1993
- Mathematics Search Committee : 1992–1993

- Secretary, Department Tenure Committee : 1989–1990, 1991–1992
- Chair, Department Graduate Faculty Committee : 1990–1992
- Honors Calculus sub-committee : 1990–1991
- Secretary, Committee for Promotion to Associate Professor : 1990–1991
- Applied Mathematics Committee : 1985–1990
- Computer Science Committee : 1984–1989
- Secretary, Department Graduate Faculty Committee : 1988–1989
- Pi Mu Epsilon (Faculty Advisor) : 1985–1987
- Mathematics Curriculum Revision Committee : 1986
- M.U.M. Revision Committee : 1986

Buchtel College and University Service :

- Member, OBOR College Readiness and Placement Advisory Committee: 2012
- Member, Woodrow Wilson teaching team: Summer 2011
- Search committee, Tutoring Co-ordinator: 2011-2012
- STEMM Search Committee, College of Education : 2010–2011
- Vice-Chair, College Committee on Promotion to Associate Professor : 2008–2010
- University Hearing Board : Aug 2008–Aug 2011
- Interviewer for BS/MD program : Feb 2006 – August 2008
- NEOUCOM Advisory Committee : August 2006 – August 2008
- Buchtel College Council representative : 2004–2008

- Faculty Senate : 1994–1997, 1997–2000, 2001–2004, 2004–2007, 2009–2010
- Chair, Computing & Communications Technology Committee : 2002–2007
- Computing & Communications Technology Committee : 2001–2007
- Buchtel College Council curriculum sub-committee : 2004–2006
- Buchtel College Teller : 2005–2006
- Chair, College Committee on Promotion to Professor : 2005–2006
- Buchtel College Recording Secretary : 2004–2005
- Committee on Web Page Policy and Design : April 2005–May 2005
- Decision-Making/Recommending Entities Task Force : 2002–2003
- Planning and Budget Committee : 2001–2002
- Faculty Rights and Responsibilities Committee : 1998–2001
- Athletics Committee : 1997–2000
- Faculty Senate Executive Committee : 1995–1997, 1997–1999
- Chair, Athletics Committee : 1997–1998, 1998–1999
- Chair Pro Tempore, Buchtel College of Arts and Sciences : 1998–1999
- Faculty Advisory Committee to the Provost : 1997–1998
- Curriculum Review Committee : 1995–1997
- Buchtel College NCA Accreditation Committee : 1996–1997
- Hearing Board Pool : 1996–1997
- Personnel Policies Task Force : 1996–1997
- APCC : 1994–1996
- Ad Hoc Committee on Salary Equity : 1995–1996

- APCC curriculum sub-committee : 1994–1995
- Ad Hoc Committee on International Graduate Admissions : 1995
- Buchtel College Council (Alternate Delegate) : 1988–1990
- Service on several Master’s and Doctoral committees in the College of Education and the College of Engineering.

Awards and Recognitions

- Buchtel College of Arts and Sciences Service Award, 1998

Memberships in Professional and/or Honorary Societies :

- IMA (Member) : 1978–1983
- SIAM : 1979–1991
- AMS : 1980–1982
- Pi Mu Epsilon Honorary : 1980–present
- MAA : 1980–present
- IMA (Associate Fellow) : 1983–1997
- IMA (Fellow) : 1997–present
- Elected C. Math : 1997
- Elected C. Sci : 2005

Personal Details and Community Service :

- Kwanmukan Karate Rokudan (Sixth Degree Black Belt)
- Kwanmukan Ju Jitsu 2nd Degree Black Belt