

PERSONAL INFORMATION

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Position: Ferguson Professor, Mathematics, W&M;
Affiliate faculty, Applied Science Department, W&M;
Affiliate member, Institute for Quantum Computing, University of Waterloo;
Honorary Professor, University of Hong Kong;
Honorary Professor, Shanghai University.

EDUCATION

B. A. (1982) and Ph.D. (1986), University of Hong Kong.

ACADEMIC POSITIONS

The College of William and Mary:

Ferguson Professor, August 2000–Present

(On leave for the academic year 2004–05, fall 2010, spring 2012,
spring 2014; 2017–18; also on leave supported by the Fulbright
Fellowship for the spring and fall of 2011.)

Chair of the mathematics department, 2002–2007.

Professor, August 1996–July 2000

(On leave for the academic year 1998–99)

Associate Professor, August 1991 – July 1996

(On leave for the academic year 1992–93)

Assistant Professor, August 1988 – July 1991

(On leave for the Spring of 1991)

Institute for Quantum Computing, University of Waterloo.

Affiliate member, May 2014 – present.

Visiting fellow, March–April; 2014, Sept.–Oct., 2017.

Shanghai University:

Co-Director, the International Research Center for Tensor and Matrix Theory,
June 2016 – present.

Honorary Professor, June 2010 – present.

Sungkyunkwan University in South Korea.

Scientific Advisory Board member, the "Applied Algebra and Optimization
Research Center (AORC)", July, 2016 – present.

University of Hong Kong:

Honorary Professor, June, 2002 – August, 2017.

The Hong Kong Polytechnic University, Hong Kong.

Senior research fellow, January – February, 2014.

Taiyuan University of Technology:

Honorary Professor, June 2009 – December 2013.

Heilongjiang University:

Honorary Professor, September 2004 – June 2007.

University of Toronto:

Visiting Professor, August 1998 - July 1999.

Visiting Associate Professor, August 1992 - May 1993.

Johns Hopkins University:

Visiting Assist. Professor, Spring of 1991.

University of Wisconsin - Madison:

Van Vleck Assistant Professor, August 1986 - July 1988

EDITORIAL POSITIONS AND OFFICES IN PROFESSIONAL SOCIETY

Editorial positions:

- Linear Algebra and Its Applications,
Associate/senior editor: Jan. 1996 - present.
- Linear and Multilinear Algebra,
Editor-in-chief: May 2006 - present,
Associate editor: March 2001 - April 2006,
Editorial board member: Sept. 1993 - March 2001.
- Operators and Matrices,
Editor-in-chief: May 2009 - present,
- IMAGE (Newsletter of International Linear Algebra Society),
Senior associate editor: Sept. 98 - July, 2007,
Contributing editor: Sept. 95 - August, 98.
- Involve - a Journal of Mathematics, January 2008 - present.
Member of the editorial board.
- Journal of Inequalities in Pure and Applied Mathematics,
Editorial board member: Sept. 99 - July, 2010.

Offices in the International Linear Algebra Society:

- Advisory Committee (Chair), April 1998 - Feb. 2002; Feb. 2016 - present.
- Board of directors, March 1995 - Feb. 1997, Feb. 2013 - Feb. 14
- Vice president, Feb. 2007 - Feb. 2013.
- Journal Committee (Chair), May, 1999 - Feb. 2005.
- Nominating Committee, April 2000 - Feb. 2001.
- Nominating Committee (Chair), April 1997 - Feb. 1998.
- Advisory committee, Sept. 1994 - March 1995.
- Nominating committee, March 1993 - June 1993.

HONORS, PRIZES, AND AWARDS

2014 Shanghai City Oversea Renowned professor.

2011 USA Fulbright Scholar

2010 Shanxi 100 Talent Program

2009 Plumeri Award for Faculty Excellence (William & Mary)

2008 Simon Teaching Award (William & Mary)

2004 Virginia Outstanding Faculty Award

2003 PBK Society Teaching Award

COURSES TAUGHT

Brief calculus with applications, calculus, multi-variable calculus, foundation of higher mathematics, linear algebra, elementary analysis, intermediate analysis, abstract algebra I & II, differential equations, advanced linear algebra, applied combinatorics, number theory, geometry, complex analysis, game theory, numerical analysis, quantum computing, topics in computational mathematics, mathematics in daily life; matrix analysis and applications (graduate level, at Johns Hopkins University), topics in linear algebra (graduate level, at UW-Madison). Freshmen seminars on "Teaching, learning, and research in mathematics", "Applications of mathematics", "Mathematics in daily life". Senior seminars on "Quantum Computing", "Linear Algebra and its Applications", "Coding and Cryptology", "Seminars for mathematics teachers".

POST-DOCTORAL FELLOW, GRADUATE AND UNDERGRADUATE ADVISING

Post-doctoral fellows:

2001-02: Ed. Poon.

Ph.D. Students:

2004: Tom Milligan, William & Mary.

2005: Nung-Sing Sze, University of Hong Kong.

(joint supervision with Dr. Jor-Ting Chang.)

2014: David Guo, National Sun Yet-san University, Taiwan.

(joint supervision with Professor Ngai-Ching Wong.)

2016: Diane Pelejo, William & Mary.

Undergraduate Honors projects:

1994: J. Karro (High Honors),

A-L. Klaus (High Honors),

1997: I. Nelson (Highest Honors),

C. Pohanka (Honors),

1999: B. Arkin (Highest Honors) [Joint with W. Bynum],

2003: H. Chiang (Highest Honors),

F. Curtis (Highest Honors) [Joint with R. Kincaid].

2008: T. Crowder (Highest Honors).

2009: S. Clark (Highest Honors), J. Mahle (High Honors).

2010: A. Herman, A. Wilcox [joint with T. Dey],

H.L. Williams [joint with G. Yu].

NSF undergraduate research projects including REU / CSUMS / EXTREEMS-QED:

1990: S.Chang, C.Heckman, (3 projects)

1992: P.Mehta, (3 projects)

1993: C.Hamilton-Jester, A-L. Klaus, W.Whitney, (3 projects)

1996 J. Lin [co-advised with L. Rodman] (1 project)

T.Coleman, T.Travison

[co-advised with M. Lundquist] (1 project)

2000: H.Chiang, W.Funk, (2 projects)

2002: F.Curtis, D.Pragel [Co-advised with J. Drew] (1 project)

O.Shenker, K.Spurrier, (1 project)

2003: M.Alwill, C.Maher. (2 projects)

E. Bellenot [Joint with S. Schreiber] (1 project)

2005: C. South (1 project)

2007: S. Clark, A. Rastogi (2 projects)
 2008: T. Crowder, J. Mahle, D. Yang, (3 projects)
 2009: A. Herman, A. Wilcox, (2 projects)
 H.L. Williams [Joint with G. Yu] (1 project)
 2010: V. Forstall, V. Yannello, (2 projects)
 E. Cole [Joint with G. Yu] (1 project)
 2011: C. Albert, J. Soosiah [Joint with G. Yu] (2 projects)
 2012: R. Roberts (1 project)
 2013: T. Morrison, R. Liu, J. Bieron (2 projects)
 2014: E. Berry, D. Katsaros (3 projects)
 2015: G. Taylor.
 2016: C. Hambric.
 2017: G. Tauscheck, Y. Liu (both co-advised with J. Shi).
 E. Chia, J. Monroe (both co-advised with with G. Yu).
 Wilson interdisciplinary undergraduate research project:
 1996: S. Nataraj. (Mathematics and Economics)

HOST OF LONG TERM VISITING SCHOLARS

- Jianlian Cui, Tsinghua University, China, Aug. 2009-Aug. 2010.
- Chunyuan Deng, South China Normal University, Aug. 2012-Aug. 2013.
- Xiaoyan Yin, Xidian University, China. Aug. 2012-Aug. 2013.
- Junhua He, University Electronic Science and Technology, China. Jan. 2013-Jan. 2014.
- Runling An, Taiyuan University of Science and Technology, China. Feb. 2013-Feb. 2014.
- Xuefeng Wang, Ocean University of China, Feb. 2013-Feb. 2014.
- Hou-Biao Li, University of Electronic Science and Technology, China. Feb. 2013-Feb. 2014.
- Shuqian Shen, China University of Petroleum, China. Oct. 2013-Oct. 2014.
- Xuefeng Duan, Guilin University of Science and Technology, China. Feb. 2014-Feb. 2015.
- Kuo-Zhong Wang, National Chiao Tung University, Taiwan, Feb. 2015-Feb. 2016.
- Yue Liu, Fuzhou University, China. Sept. 2015-Sept. 2016.
- Weiyan Yu, Hainan Normal University, China, March, 2016-March, 2017.
- Ling Zhang, Chongqing Jiaotong University, China. Aug. 2016-Aug. 2017.
- Chao Ma, Shanghai Maritime University, China, Aug. 2016-Aug. 2017.

RESEARCH

PAPERS, BOOKS, MONOGRAPHS, REVIEW.

Current list of publications is available at <http://cklix.peoplewm.edu/pub.html/>

RESEARCH GRANT

External grants.

- USA Simons Foundation
 - * Collaboration Grants for Mathematicians, 2015-2020.
- USA National Science Foundation
 - * Collaborative research grants (with Yiu-Tung Poon, Iowa State University): 2009-2010, 2010-2014.
 - * EXTREEMS-QED: Computational and Statistical theory and techniques in the study of large data sets (an undergraduate research grant with a group of Mathematics faculty), 2013-2018.
 - * CSUMS: Theory, techniques, and research in computational mathematics (an undergraduate research grant with a group of W&M AS, CS, Mathematics faculty), 2007-2012.
 - * Research grants as the only PI: 1989-91, 1991-93, 2006-09;
 - * Joint research grants with Roy Mathias, 1997-2000, 2000-05;
 - * Post-doctoral fellow at University of Wisconsin: 1987-1989.
 - * REU Programs at William and Mary (Senior Personnel), 1990, 1992, 1993, 1996, 2003 (Supervisor of 9 students.)
- 2011 Fulbright Fellow
- National Natural Science Foundation of China, 2015-18.
- Shanghai City, Oversea Renowned Professor, 2014, 2015.
- Shanxi 100 talent program (2010 awardee), 2010-2013.
- Key Disciplines of Shanghai Municipality (S30104), 2010-2012.
- Hong Kong Research Grants Council
 - * Joint research grant with Nung-Sing Sze, 2010-2013.
 - * Joint research grant with Jor-Ting Chan, 2003-05, 2005-2008.
 - * Joint research grant with Tuen-Wai Ng, 2005-2008.
- Slovenian Research Agency
 - * Bilateral collaboration, 2014-2016.
 - * Bilateral collaboration, joint with Yiu-Tung Poon, 2011-2013.
 - * Bilateral collaboration, joint with Leiba Rodman, 2006-2009.
- American Mathematical Society -Fan's Exchange Program
 - Joint grant with Junping Shi, 2003-04.
- NATO
 - * Visiting Scholar Grant, 1996-1997.
 - * Collaborative Research Grant (Project co-ordinator), 1993-95, 1995-97.

Internal grants of William and Mary.

- QEP/Mellon fellows (joint with D. Lutzer).
 - to conduct a course on Introduction to Quantum Computing and involve the Mellon fellows as assistance in the Spring of 2010.
- QEP/Mellon fellows (joint with S. Day).
 - supporting two students to do research in computational

- mathematics and mathematical education in the Fall of 2008.
- Mellon teaching fellows
 - supporting two students to do research in mathematics and mathematical educations in the Spring of 2008.
- Freeman Fellowship
 - supporting the visit of Freeman Fellow - Professor Jinchuan Hou to visit the mathematics department in the Fall of 2005.
- Faculty Research Assignment Grants from the College, 1992-1993, 1998-99, 2004-2005.
- Summer Research Grant from the College, 1993 & 1994.
- May Seminar Grant from Charles Center.
 - 2016 Evaluation and preperation of the mathematics skills of freshmen.
 - 2014 New curriculum in data science.
 - 2001 Improving Mathematics Curriculum for Economics and Business students.
 - 1993 Using Technology in Teaching Mathematics
- Seed grant from the Office of the Graduate Dean, 1996-97.
 - (To develop a Web page on Matrix inequalities in Science and Engineering.)
- Wilson Fellowship for Interdisciplinary Research, 1996.
 - (Supervising a W&M student from the economics department.)
- Mini-Grant for Integrating Technology in Teaching from the College, 1994.
- Conference Grant from the Dean's office, summer of 1992.
 - (To support the first workshop on Numerical ranges and numerical radii held at Williamsburg.)
- Funds of Excellence from the College, 1991-92.
 - (Mathematics Curriculum Reform)

SPECIAL LECTURE, and LECTURE SERIES

- Hong Kong Baptist University, Matrix problems and techniques in quantum information science (Three 1 hour lectures), December, 2017.
- Shanghai University International Short Term, June, 2014. (A five day course on Mathematics in Daily Life.)
- A lecture series on Quantum Information Science, Shanghai University, January, 2014. (Three 2 hour lectures.)
- Summer workshop on Quantum Information Science, Taiyuan University of Technology, July, 2013. (Two 2 hour lectures, and chair of three 2 hour working session.)
- Summer workshop on Quantum Information Science, Taiyuan University Technology, July 2012. (Two 2 hour lectures.)
- A lecture series on Quantum Information Science, Academia Sinica, Taiwan, December, 2011. (Three 1.5 hour lectures.)
- Summer school on Quantum Information Science, Taiyuan University of Technology, July, 2011. (Two 1.5 hour lectures, and two 1.5 hours tutorials).
- Summer school on quantum computing, Center for Quantum Computing, Kinki University,

August, 2010. (Four 1.5 hours lectures, and two 1.5 hour tutorials.)

- Summer School on Matrix Analysis supported by IMA and NSF, Iowa State University, July 2008. (Four 1.5 hour lectures on Matrix Inequalities, and two 1.5 hours tutorials.)

CONFERENCE TALKS (2013-present)

2018

Recent Trends in Operator Theory and Applications, University of Memphis, May.

International workshop on Matrix Inequalities & Matrix Equations, Shanghai Univ., June.

Workshop on Numerical ranges and numerical radii, Munich, Germany, June.

Workshop on Preserver Problems, Belfast, June.

SIAM Annual Meeting, Oregon, July.

International Workshop on Matrices and Operators, Shanghai, July.

Workshop on the Mathematical Theory of Networks and Systems, Hong Kong, July.

International Workshop on Operator Theory and its Applications, Shanghai, July.

2017

A workshop on Quantum Information & Operator Algebra, Chinese Academy of Science, Jan.

Workshop on Matrix/Operator Theory & Their Applications, Sungkyunkwan University, May.

International workshop on Matrix Inequalities & Matrix Equations, Shanghai Univ., June.

International workshop on Matrices & Operators, Hunan University, June.

Linear Algebra Workshop, Slovenia, July.

Preservers Everywhere, Budapest, July.

Western Canada Linear Algebra Meeting, Banff, July.

International Linear Algebra Society Conference, Iowa State University, July.

AIM Workshop on Crouzeix's Conjecture, San Jose, July/August.

Conference on Operator systems in quantum information, Guelph, August.

China-Korea International Conference on MATRIX THEORY WITH APPLICATIONS, Sungkyunkwan University, December.

2016

International workshop on Matrix Inequalities and Matrix Equations, Shanghai Univ., June.

Workshop on Numerical ranges and numerical radii, Soochow university, Taiwan, June.

International workshop on Matrices and Operators, Jeju University, Korea, July.

International Linear Algebra Society Conference, Belgium, July.

Winter meeting of the Canadian Mathematical Society, Niagara Falls, December.

China-Korea International Conference on MATRIX THEORY WITH APPLICATIONS, Shanghai University, December.

2015

International workshop on Matrix Inequalities and Matrix Equations, Shanghai Univ., June.

Summer Workshop on Quantum Information Science, Tsinghua Sanya International Mathematics Forum, July.

International workshop on Matrices and Operators, Shaanxi Normal University, July.

Conference on Numerical ranges and quantum information science, Univ. of Guelph, Aug.

International workshop on Matrix Analysis and its Applications, Nova Southeastern University, December.

2014

Workshop on Quantum Information Science, Hong Kong Polytechnic University, January.

Workshop on Quantum Information Science, University of Guelph, April.

Canadian Mathematical Society Conference, Winnipeg, June.

Second International Education Forum of Shanghai, June.

Workshop on Matrix Theory, Suzhou, June.

Summer workshop on Quantum Information Science, Shanghai, July.

Workshop on Matrices and Operators, Haikou, July.
Workshop on Numerical ranges and numerical radii, Sanya, August.
International Linear Algebra Society Conference, Korea, August.
Shanghai International Conference on Matrix Analysis and Applications, December.
International Conference on Tensors and Matrices, December.
Workshop on Quantum Information Science, Hong Kong Polytechnic University, December.
2013
AMS Regional Meeting, Ames, Iowa, April.
International Linear Algebra Society Conference, Providence, June.
CMIV Workshop on Matrix Analysis & Applications , Hong Kong Baptist University, July.
Matrix Theory and Graph Theory workshop, North University, Taiyuan, July
Workshop on Preserver Problems, Tsinghua University, July.
Workshop on Matrices and Operators, Beijing Normal University, July.
Summer workshop on Quantum Computing, Kinki University, August.
Canadian Mathematical Society Winter Meeting, December.

COLLOQUIUM / SEMINAR TALKS (2013-present)

2018

Academia Sinica, Taiwan, January.
National Chung Hsing University, Taiwan, February.
National Sun Yat-sen University, Taiwan, February. (1 colloquium/1 seminar talk).
University of Hong Kong, February.
University of Maryland, Baltimore, March.
National Taiwan University of Science and Technology, Taipei, May.
Tamkang University, Tamsui, May.
National Taiwan Normal University, Taipei, May.
Soochow University, Taipei, May.
National Tsinghua University, Hsinchu, May.
National Chiao Tung University, Hsinchu, May.
National Chung Hsing University, Taichung, June.
National Sun Yat-sen University, Kaohsiung, June.
University of Science and Technology, Hefei, June

2017

Loyola University at Maryland, April.
University of Guelph, Sept.
University of Waterloo (Analysis Seminar), Sept.
York University, October.
University of Waterloo (Tutte Colloquium), October.
Johns Hopkins University, November.
Embry-Riddle Aeronautical University, November.
University of Regina, November.
San Jose State University, December.
Fudan University (seminar), December.
Tonji University (seminar), December.

2016

College of William and Mary, February.
Georgia State University (colloquium), March.
Shanghai Jiao Tong University (seminar), June.
National Sun Yet-san University (seminar), June.
National Cheng Kung University (seminar), June.

Sungkyunkwan University (seminar), July.
University of Washington - Bothell (seminar), July.

2015

College of William and Mary, February.
Seattle University (colloquium), March.
University of Washington - Seattle (Seminar), March.
Auburn University (colloquium), April.
University of Manitoba (colloquium), May.
Sydney University of Technology, June.
Tongji University (seminar), June.
Shanghai Jiaotong University (seminar), June.
Southeast University (seminar), June.
Hunan University (seminar), July.
Xiangtan University (seminar), July.
Tsinghua University (seminar), July.
Chinese Academy of Science (seminar), July.
Xi'an university of electronic science and technology (colloquium), July.
Joint Quantum Institute, University of Maryland (seminar), September.

2014

National Sun Yat-sen University, January.
Shanghai University (lecture series on quantum information science - 6 hours), January.
Nanjing University (seminar), January.
University of Macau (colloquium), February.
Tongji University, June.
Zhejiang University, June.
Suzhou University, June.
Soochow University, July.
National Central University, July.
Tsinghua University, July.
Chinese Academy of Science, July.
Loyola University at Maryland, October.
Virginia State University, November.
Linyi University (3 talks to faculty members, graduates and undergraduates), December.

2013

Shanghai University (colloquium and seminar), January.
Shanghai Jiaotong University, January.
Eastern China Normal University, January.
Tongji University, January.
College of William and Mary (colloquium), January.
Loyola University (colloquium), February.
Iowa State University (1 colloquium and 1 seminar talk), March.
Christopher Newport University (PME induction talk), March.
College of William and Mary (PME induction talk), March.
Naval Academy (colloquium), April.
Shanxi University (colloquium), July.
Southern China Normal University (colloquium), July.
College of William and Mary (colloquium), October.
Western Michigan University (1 colloquium, 1 seminar), October.
University of Chicago (seminar), October.
University of Illinois - Chicago (colloquium), October.

PROFESSIONAL SERVICE

Collegewide Committee service:

Noyce Scholarship Steering Committee, Fall, 2014 - present.
NTE Committee, Fall, 2012.
Review Committee of Class of 1962 Professor of Applied Science, Spring 2011.
Review Committee of CSX Professor of Applied Science, Spring 2011.
Lecture Funds Committee (Chair), 2001-2004.
Review Committee (convener) of Class of 1961 Professor, Fall 2001.
Review Committee of CSX Professor of Applied Science, Fall 2001.
Search Committee for the Chancellor Professors, 2000-01.
Ad Hoc Advisory Committee on Undergrad. Sci. Education, 1997-98.
Academic Advising - Freshman advisor, Fall of 1997-98.
Search Committee for the Dean of the Faculty of A&S, 1994-95.

Mathematics Department:

Chair, July 2002 - 2007 (on leave 2004-05).
Merit Evaluation Committee (elected), 1993-94, 95-96, 97-98, 00-01.
Personnel Committee (elected),
1991-92, 94-95, 96-97, 99-00, 01-02, 08-09, 11-12, 12-13.
Hiring Committee, 1996-97, 99-00, 01-02.
Undergraduate Curriculum Committee, 1988-92, 93-98, 13-present.
Colloquium Committee, 1990-91, 96-98, 99-02, 13-present.
Mathematics Department Library Committee, 1995-98, 99-00.
Computer Committee, 1993-1998, 99-present (except on leave).
Grant Opportunities Co-ordinator, 1990-92, 93-96.
Co-ordinator of Faculty study seminar, 1994-98, 99-01.

REVIEWER AND REFEREE FOR

Mathematical Reviews, National Science Foundation,
Natural Sciences and Engineering Research Council of Canada,
Hong Kong University Grants Committee, and many research journals.

ORGANIZATION OF CONFERENCES

- Workshops on "Numerical ranges and numerical radii".
Williamsburg, 1992; Madison, 1998; Auburn, 2002; Bremen, 2006;
Williamsburg, 2008, Krakow, 2010; Kaohsiung, 2012; Sanya, 2014.
- Workshops on "Matrices and Operators".
First/second ones at Hong Kong, 2007; third one at Hong Kong, 2008;
forth one at Kaoshiong, 2009, fifth one at Taiyuan; 2010, sixth one
at Chengdu, 2011, seventh one at Heilongjiang, 2012; eighth one at
Beijing, 2013; ninth one at Haikou, 2014; tenth one at Shaanxi, 2015.
- Workshops on "Preserver problems" in Hong Kong, 2004, 2005.
- International Meeting on Matrix Analysis and Applications,
at Fort Lauderdale, 2003 and 2006
- International Linear Society Conferences, mini-symposia:
"Quantum Information Science" at Providence, 2013.

- "Matrix and Operator Inequalities" at Pisa, 2010.
- "Matrix and Operator Inequalities" at Amsterdam, 2006.
- "Preserver Problems" at Regina, 2005.
- "Matrix inequalities" at Coimbra, 2004.
- SIAM Applied Linear Algebra Conferences, mini-symposia:
 - "Indefinite Inner Product" at Williamsburg, 2003.
 - "Numerical Ranges and Numerical Radii" at Minneapolis, 1991.
- IWOTA, mini-symposium
 - "Matrix and Operator Inequalities" at Williamsburg 2008.
- Fourth International Matrix Theory Conference, a symposium on
 - "Linear Preserver Problems" at Auburn, 1990.
- Southeastern Linear Algebra Meeting, Williamsburg, 1996.
- Co-ordinator of the ATLAST workshop on using computer technology in teaching linear algebra, Williamsburg, 1995.

EXAMINATION COMMITTEE (number of candidates in bracket)

- Ph.D. candidates of
 - University of Hong Kong (4),
 - College of William and Mary (2).
 - University of Wisconsin - Madison (1).
 - University of Guelph (1).
 - University of Toronto (2).
 - University of Waterloo (1).
- M. Phil. candidates of University of Hong Kong (6).
 - University of Malaya (1).
- Honors Theses of William and Mary students in CS, Physics, Chemistry, Modern Language, and Mathematics Departments.