

Curriculum Vitae
YangQuan Chen, Ph.D.
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Contact Information

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W: <http://scholar.google.com/citations?user=RDEIRbcAAAAJ&hl=en>

LAB: <http://mechatronics.ucmerced.edu/>

Education

Ph.D.	Electrical Engineering	Nanyang Technological University, Singapore	1998
M.S.	Automatic Control	Beijing Institute of Technology, China	1989
B.S.	Industrial Automation	Univ. of Science and Technology of Beijing, China	1985

Employment History

2014-	Associate Professor (step 4) with tenure, School of Engineering, Univ. of California, Merced.
2012-2014	Assistant Professor (step 6), School of Engineering, Univ. of California, Merced.
2011-2011	Visiting Professor, CNES Member, Dept. of EE, University of Pretoria, South Africa
2008-2012	Associate Professor with tenure, Graduate Coordinator (08-10), ECE Dept. of USU.
2002-2008	Assistant Professor, ECE Dept. of USU. Director of CSOIS (since June 2004)
2000-2002	Research Assistant Professor of Electrical Engineering, ECE Dept. and CSOIS.
1999-2000	Staff Engineer, Servo Product Dev. Group, Seagate Technology International, Singapore Science Park Design Center, Singapore. (http://www.seagate.com)
1998-1999	Professional Officer, Center for Intelligent Control, National University of Singapore. (http://www.ece.nus.edu.sg/cic)
1996-1998	Research Engineer, ECE Dept. of National University of Singapore.
1995-1996	Research Scholar, School of EEE, Nanyang Technological University, Singapore. (http://www.ntu.edu.sg/eee/)
1994-1995	Associate Professor, Dept. of Electrical Engineering, Xi'an Institute of Technology
1992-1995	Deputy Dept. Head, Dept. of Electrical Engineering, Xi'an Institute of Technology, China (now Xi'an Technological University http://www.xatu.edu.cn)
1988-1994	Lecturer, Dept. of Electrical Engineering, Xi'an Institute of Technology, China
1987-1988	Visiting Researcher, Dept. of Automatic Control, Beijing Institute of Technology, China.

Patents (Awarded and Applications Published online)

1. US06,324,890. 12/04/2001. "Method of characterizing and screening voice coil motor pivot friction in a low velocity region"
2. US06,437,936. 08/20/2002. "Repeatable runout compensation using a learning algorithm with scheduled parameters"
3. US06,563,663. 05/13/2003. "Repeatable runout compensation using iterative learning control in a disc storage system"
4. US06,574,067. 06/03/2003. "Optimally designed parsimonious repetitive learning compensator for HDDs having high track density"
5. US06,636,375. 10/21/2003. "Seek in a disc drive with nonlinear pivot friction"
6. US06,654,198. 11/25/2003. "Repeatable run-out error compensation method for a disc drive"

7. US06,661,599. 12/09/2003. "Enhanced adaptive feedforward control to cancel OPR disturbance by shaping the internal mode"
8. US06,674,589. 01/06/2004. "Method for harmonic frequency identification in a disc drive".
9. US06,674,607. 01/06/2004. "Method and apparatus for determining high order polynomials for linearization of position signals".
10. US06,690,534. 02/01/2004. "Method & apparatus for handling multiple resonance freq. in disc drives using active damping".
11. US06,704,159. 03/09/2004. "Automatic acoustic management system for a disc drive".
12. US06,785,073. 08//31/2004 "Identification and cancellation of cage frequency in a hard disc drive".
13. US06,831,804. 12/14/2004 "Method and apparatus for handling resonance effects in disc drives using active damping".
14. US07,599,752. 10/06/2009. "Tuning methods for fractional-order controllers".
15. US20110010026, 01/13/2011. "Calibration Method for Aerial Vehicles"
16. US20130268219, 10/10/2013. "Fractional Order Power Point Tracking",

Consulting

2002 Seagate Technology International.
 2004 Cornice Inc.
 2010-2011 Samsung SISA.
 2013- Lam Research

Professional Registration

Certified Six Sigma Green Belt (2000, Singapore)

Scientific and Professional Societies Membership

Senior Member, IEEE (Control Systems Society, Systems, Man, and Cybernetics Society, Robotics and Automation Society, Signal Processing Society);
 Member of ASME (American Society of Mechanical Engineers), AMA (Academy of Model Aeronautics), ASEE (American Society for Engineering Education), AUVERSI (The Association for Unmanned Vehicle Systems International), AWRA (American Water Resources Association), ASPRS (American Society of Photogrammetry and Remote Sensing) and AIAA (The American Institute of Aeronautics and Astronautics).

Teaching

Graduate courses taught at UC Merced:

- ME280. "Fractional Order Mechanics"; Fall 13. (4 units, Lab intensive)
- ME280. "Fractional Order Mechanics"; Fall 14. (4 units, Lab intensive)
- ME211. "Nonlinear Controls"; Fall 2015. (scheduled, 4 units, [new 2015 textbook](#))

Undergraduate courses taught at UC Merced:

- ME142. Mechatronics (4 units, lab intensive); Spring 2013, 2014, 2015
- ENGR097/ENGR197 Engineering Service Learning, Spring 2014, Fall 2014, Spring 2015. (1-2 units)
- ENGR190 Capstone Project (4 units) Sp 15.
- ME170 Capstone Project (3 units) Sp 13, 14, Fall 13.
- ME195/ENGR195 Independent Research Project. Fall 12, Sp13, Su 13, Fall13, Sp 14, Su 14, Fall 14, Sp 15, Su 15 ... (2-4 units)

Graduate courses taught at USU: (IS: "Independent Study" course)

- ECE/MAE7350 Intelligent Control Systems (3 credits)
- ECE/MAE6320 Linear Multivariable Controls (3 credits, also online distant edu)

- ECE/MAE7330 Nonlinear and Adaptive Control (3 credits)
- ECE/MAE7360 Robust and Optimal Control (3 credits)
- ECE/MAE7750 Distributed Control Systems (3 credits)
- ECE6010 Random Processes in Electronic Systems (3 credits)
- ECE6930 ST: Machine Vision in Control and Automation (3 credits, IS)
- ECE7930 ST: Computational Intelligence (3 credits, IS)
- ECE7930 ST: Computational Optimal Control (3 credits, IS)
- ECE6930 ST: Advanced Control Designs (3 credits, IS)
- ECE6930 ST: Sensor Networks (3 credits, IS)
- ECE6930 ST: Fractional Calculus in Modeling, Control & Signal Proc. (3 cr., IS)
- ECE7930 ST: Distributed Control of Robotic Networks (4 credits, IS)
- ECE6930 ST: Multi Unmanned Aerial Vehicle Systems (3 credits, IS 09, 10)
- ECE6930 ST: Solving Math. Problems in MATLAB
(3 credits, regular summer'09 course, with D. Xue)
- ECE6930 ST: Applied Fractional Calculus in Engineering
(3 credits, regular summer'09 course, with C. Li, Y. Li and D. Xue)
- ECE6930 ST: Multimodal Collaborative Inertial Navigation Measurement (Fall10)
(3 credits, IS)
- ECE6930 ST: Fractional Order Stochastic Systems and Controls (Fall10)
(3 credits, IS)

Undergraduate courses taught at USU:

- ECE3620 Circuits and Signals (3 credits)
- ECE4840 Design-II (Senior Design) Engineering Design (3 credits)
- ECE4850 Design-III (Senior Design) Engineering Communications (2 credits)
- PHYX2400 ST: Nanoscience and Technology - Materials Today.
 - Two credits, regular course, NSF NUE grant)
- PHYX3500 ST: Nanomechatronics (3 credits, regular course, NSF NUE grant)
- ECE/MAE5320 Mechatronics (lab intensive) (4 credits)

Honors and Awards

2015

- MESA Lab's 9th approved FAA CoA (Certificate of Authorization) is for night flight! March 16, 2015.
- Invited Plenary Speaker. The International Symposium on FSS (Fractional Signals and Systems), Technical University of Cluj-Napoca, Romania. Oct. 2015
- Invited Speaker. February 18, 2015. Davis, CA. UC ANR RECS (Research and Extension Center System). Regional Directors's meeting.
- Invited Panelist. February 17, 2015. Sacramento, CA. Oversight Hearing. "Drones: Is California Law Ready?" A Hearing of the Senate Committee on Judiciary.
- Invited Speaker. Southwest Ag Summit. Yuma, AZ, USA. Feb. 2015
- Invited Plenary Speaker. California Melon Research Board. San Diego, CA, USA. Jan. 2015
- Invited Panelist. 2015 Unified Wine and Grape Symposium. Sacramento, CA, USA. Jan. 2015.

2014

- Dec. 2014. Guest Lecturer. College of Mathematic Science, South China University of Technology.
- 5/27/2014. Invited Tutorial. ICUAS14 Tutorial: Emerging sUAS Technology for Precision Agriculture Applications (AgDroneTech14) at Int. Conf. on Unmanned Aircraft Systems. Orlando, FL, 2014.
- Aug. 2014. Two Pre-Conference Tutorial Workshops offered at IFAC World Congress, Cape Town, South Africa. Presidential Appreciation Dinner.

- June 2014. Elected as Steering Committee Chair, Int. Conf. on Fractional Derivatives and Applications (ICFDA), Catania, Italy.

2013

- Invited Plenary Speaker. TOK (Turkish National Control Conference). Malatya, Turkey, Sept. 26, 2013.
- Invited Panelist. Legislative Hearing on Drone Uses. State of California Assembly, Public Safety Committee. August 6, 2013, Sacramento, CA.
- 2012. Robins Award - Researcher of the Year, Utah State University
- 2012. Guest co-editor, Royal Society Philosophical Transactions A, Theme Issue of “*Fractional Calculus and its Applications*” (May 2013, vol. 371 issue 1990, <http://rsta.royalsocietypublishing.org/content/371/1990.toc>)
- 2012. Guest co-editor, International Journal of Bifurcation Chaos, Special Issue on “*Fractional Dynamics and Control*” (Volume 22, issue 4, April issue of 2012)
- Editorial. Guest – Editors: Virginia Kiryakova, Yury Luchko, Francesco Mainardi, Blas Vinagre, Igor Podlubny, YangQuan Chen. SPECIAL ISSUE Dedicated to 80th Anniversary of Professor Rudolf Gorenflo. **Fractional Calculus and Applied Analysis**. Volume 14 / 2011 DOI: 10.2478/s13540-011-0001-0.
- 2011. Invited Panelist. Int. Symposium on Resilient Control Systems. August 2010, Boise, ID, USA.
- 2011: Recommended and selected to serve as Associate Editor for the journal *ISA Transactions*.
- 2011: Best Journal Paper Award \$500 (among all IFAC “*Control Engineering Practice*” journal papers published in 2008-2011), IFAC World Congress, Milan, Italy.
- 2011: Member of Advisory Committee. Invited Tutorial at 2011 ICUAS (Int. Conf. on Unmanned Aerial Systems) (full day) on May 24th, 2011, Denver, CO., on “*Multi-UAV Based Multi-Spectrum Collaborative Personal Remote Sensing: Concepts, Platform & Applications*”
- 2011: 1st Place again! 9th AUVSI SUAS (Student Unmanned Aerial Systems) Competition. Wins \$13,400. First team in the history of the competition to have won first place twice!
- 2011: Visiting Professor (Jan. – May, 2011). University of Pretoria, South Africa.
- 2010: Dissemination Award. Program Chair. The 4th IFAC Fractional Differentiation and its Applications (FDA10). Badajoz, Spain.
- 2010: Invited participant. NSF DDDAS Workshop. Aug. 30-31. Hilton Ballston. Washington DC.
- 2010: Invited Panelist. International Symposium on Resilient Control Systems. August 12, 2010, Idaho Falls, ID, USA.
- 2010: Invited Speaker. Institute of Mathematical Science, Shandong University, China. July 8th
- 2010: 9th Place! 8th AUVSI UAS (Unmanned Aerial Systems) Competition. Wins \$6,200. First team in the history of the competition to have finally figured out the magic phrase: “FLY SAFE JUST JOE”
- 2010: Designated Editor. (IFAC journal) *Control Engineering Practice* (CEP) (since August 2010)
- 2010: Associate Editor for IFAC journal *Mechatronics*.
- 2009: Associate Editor for *IEEE Transactions on Control Systems Technology* (TCST)
- 2009: Associate Editor, ASME *Journal of Dynamic Systems, Measurement and Control* (J-DSMC)
- 2009: Member of Editorial Board, *Fractional Calculus and Applied Analysis* (FCAA)
- 2009: Associate Editor, *Acta Montanistica Slovaca* (<http://actamont.tuke.sk/eb.html>)
- 2009: Retention Award, USU.
- 2009: First Prize, 7th AUVSI UAS (Unmanned Aerial Systems) Competition. Wins \$14,000 for First Place Overall
- 2009: Graduate thesis External Examiner. Kuwait University
- 2009: Graduate thesis External Examiner & Oral Examiner, University of Canterbury, New Zealand.
- 2009: June 10. Tutorial Session. Organizer and Speaker. American Control Conference. June 10-12, 2009, St. Louis, MO, USA
- 2009: May 27. Semi-Plenary Speaker. The 4th IEEE Conference on Industrial Electronics and Applications (ICIEA 2009), Xi’an, China.
- 2009: March 13. UC Berkeley Invited Seminar. “Fractional order thinking: from mechatronics to biomechatronics and beyond”.

- 2008: Second Prize, 6th AUVSI UAS (Unmanned Aerial Systems) Competition. Wins \$8,000 for 2nd Place Overall, 2nd Place in Mission, Honorable Mention in both Orals and Journal, and Prize Barrels for Autonomous Mission Flight, Autonomous Landing, JAUS and Perfect Identification of the Off-Path Target.
- 2008: Invited Panelist. "*Panel Discussion: What skills do controls engineering graduates need to have for industry?*" 2008 American Control Conference, Seattle, WA, July 2008.
- 2008: Plenary Speaker. The 3rd IFAC Fractional Differentiation and its Applications (FDA08). Ankara, Turkey, 05 - 07 Nov., 2008.
- 2008: Ph.D. student Yan Li won the prestigious FDA08 Young Riemann-Liouville Award.
- 2007: Outstanding Researcher of the Year. Dept. of Electrical and Computer Engineering, Utah State University.
- 2007: Special Invited Talk. The 2nd IEEE Conference on Industrial Electronics and Applications (ICIEA 2007), 23-25 May 2007, Harbin, China.
- 2006: Achievement Award, 2nd IFAC Int. Workshop on Fractional Derivative and its Applications (FDA06), Porto, Portugal.
- 2006: Plenary Speaker, 2nd IFAC Int. Workshop on Fractional Derivative and its Applications (FDA06), Porto, Portugal.
- 2005: 2nd Place. Crossbow Smart Dust Contest, \$2000 Cash Reward and \$500 Travel Allowance.
- 2003: *Automatica* Outstanding Reviewer.
- 2003: Invited Tutorial Lecturer (3 hours). The 1st Int. Summer School on Iterative Learning Control. June. CSOIS, Logan, Utah.
- 1999, 2000: Many Seagate Patent Awards. 1st Seagate TEC Speaker, Seagate Core Employee Award (2000).

Institutional and Professional Service

Institutional:

- Community
 - Developer and instructor. The Da Vinci Center for Innovative Learning of SJCOE, Stockton, CA, Dr. Chen gave 4 sessions of lectures, each with 45 min. to a group of nearly 60 elementary school teachers on "The Age of Data-Drones: Wright Brothers 2.0". This outreach activity is part of the CAMSP (California Mathematics and Science Partnership) cohort 10 grant led by Glen White of Tuolumne COE under grant #13-14512-1055-00
 - Invited speaker and public lecturer on drone related issues at various occasions
 - Vice President, NTU Alumni Association US West.
 - Member, Engineering Advisory Board, Merced College
 - Member, Engineering Advisory Board, Buhach Colonial High School, Atwater
- School of Engineering of UC Merced
 - Staff Search Committee (Purchasing)
 - Faculty Search Committee (ME)
 - Founding Faculty Mentor, AIAA @ UC Merced.
 - Member, Curriculum Committee
 - Member, EECS (Electrical Engineering and Computer Science)
 - Member, ME (Mechanical Engineering)
 - Member, UC Solar
 - Member, SNRI (Serra Nevada Research Institute)
 - Member, HSRI (Health Sciences Research Institute)
 - Chair, ME Undergraduate Program
 - Faculty Assessment Organizer (FAO), ME Undergraduate Program
 - Coordinator, Comprehensive Exam for ME Graduate Program
 - Founder and Faculty Mentor. Unmanned Aerial Vehicle (UAV) theme for Engineering Service Learning (ESL) program.
- UC Merced

- Member, Committee of Research (COR)
- Member, Undergraduate Committee (UGC)
- Representative of UGC: Enrollment Management Council
- Member, UROC: Undergraduate Research Opportunities Council.
- Member, Executive Committee, SPARC (Spatial Analysis Research Center)
- Member, Faculty-advisor-at-large, University Of California, Merced Vernal Pools And Grassland Reserve Advisory Committee
- Member, SNRI Advisory Committee
- Member. Library Working Group, UC Merced (2013-2014)
- UC System
 - Member, University Committee on International Education (UCIE)
<http://senate.universityofcalifornia.edu/committees/ucie/>
 - (Representing UC Merced)
 - Member, Russia Program Review Committee, UC Senate Academic Review Of The Cice St. Petersburg Programs. (Representing UCIE)
 - Participant. UCOP Innovative Learning Technologies Initiative Working Meeting April 13, 2013.
- State of California
 - Invited panelist, legislative hearing on drones. August 2013, February 2015.
 - Invited Panelist. February 17, 2015. Sacramento, CA. Oversight Hearing. “Drones: Is California Law Ready?” A Hearing of the Senate Committee on Judiciary.

Pre-UCMerced institutional services:

- Member. Dean’s Associate Professor Committee for Strategic Planning, USU (2010-2011)
- Member. Senior Faculty Search Committee for USTAR in “Energy”. (College of Engineering and College of Science, USU) (2010)
- Member. Faculty Senate. Utah State University (2010-2012)
- Chair, Promotion/Tenure Committee for a faculty member in ECE Dept. (2009-2012)
- Director, CSOIS Center for Self-Organizing and Intelligent Systems (<http://www.csois.usu.edu>) (since June 2004-2012)
- Chair, Electrical Engineering Faculty Search Committee, ECE Dept. of USU (2007),
- Chair of the Graduate Committee, ECE Dept. of USU (2008-2010)
- Member, Dept. Head Search Committee, ECE Dept. of USU (2007).
- Member, Executive Committee, ECE Dept. of USU (2007-2012).
- Member of the Electrical Engineering Faculty Search Committee, ECE Dept. of USU (2004, 2006),
- Member of the Graduate Committee, ECE Dept. of USU (2002-2008)
- Judge, USU Graduate Symposium, USU Graduate Student Senate, March 4, 2004; April 15, 2005.
- USU CSSA (Chinese Students and Scholars Association) Faculty Advisory Committee (2003).
- Faculty Mentor (2001-2002) for Vector Floor Theme Hall Program, Jones Hall, Housing and Food Service and College of Engineering.
- Faculty Mentor (2002-2003) for Theme Housing Program, Reeder Hall, Housing and Food Service and College of Engineering.
- Appreciation Letter from the late USU President Kermit L. Hall. “Student Move-in Days”. Volunteer helper, for two days, 2003.

Professional:

- Reviewer, Mathematical Reviews <http://www.ams.org/mresubs/index.html> (2015-)
- Associate Editor. *IET Control Theory and Applications* (2015-)
- Associate Editor. [Cogent OA|Engineering](#) (2014-)
- Associate Editor. [PFDA](#) (Progress in Fractional Differentiation and Applications - An Int. Journal) (2014-)
- Topic Editor-in-Chief “Field Robotics”. *International Journal of Advanced Robotic Systems* (2013-)

- Member of Editorial Advisory Board, *An International Journal of Optimization and Control: Theories & Applications* (IJOCTA), <http://ijocta.balikesir.edu.tr> (2011-)
- Associate Editor, *IFAC Mechatronics* (2011-)
- Associate Editor, *IFAC journal Control Engineering Practice* (CEP), (2010-)
- Associate Editor, *ISA Transactions* (2011-)
- Associate Editor, *IEEE Transactions on Control Systems Technology* (TCST) (2010-)
- Associate Editor, *ASME Journal of Dynamic Systems, Measurement and Control* (J-DSMC) (2009-)
- Associate Editor, *Fractional Calculus and Applied Analysis* (FCAA: ISSN 1311-0454) (2009-)
- Associate Editor, *Fractional Differential Calculus* (FDC), <http://fdc.ele-math.com/> (2009-)
- Associate Editor, *Acta Montanistica Slovaca* <http://actamont.tuke.sk/eb.html> (2009-)
- Associate Editor, ISA Review Board for American Control Conference of AACC (2004-)
- Associate Editor, IEEE Control Systems Society Conference Editorial Board (2002-)
- Associate Editor, IEEE Robotics and Automation Society Conference Editorial Board (2012-)
- Past Chair, Technical Committee of Mechatronics and Embedded Systems and Applications (MESA), ASME DED (Design Engineering Division) (2010-2011)
- Chair, Technical Committee of Mechatronics and Embedded Systems and Applications (MESA), ASME DED (Design Engineering Division) (2009-2010)
- Chair, Technical Committee of Mechatronics and Embedded Systems (MES), IEEE ITSS (Intelligent Transportation Systems Society) (2009-2010)
- External Thesis Examiner, University of Pretoria, South Africa, 2011, 2012, 2013, 2014
- Tenure/promotion external reviewer. 2011: (two US universities); 2013: one Peking University; 2015: one Khalifa University)
- AAAS review panelist for Saudi Arabia, 2011
- Luxemburg Science Foundation proposal review, 2011
- Netherlands Science Foundation proposal review, 2011
- Hong Kong GRC, Czech, Finland, Denmark, proposal reviews, 2013, 2014, 2015
- Elsevier book series proposal review and book proposal reviews, 2011
- South Africa NRF proposal review, 2010, 2012, 2014
- ARL Proposal Review, 2009
- NASA Panel Review, 2008
- NSF CISE REU Panel Review, 2009, 2010.
- NSF CAREER Panel Review, 2009.
- NSF Panel Review, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014.
- USDA SBIR proposal reviews, 2013, 2014, 2015
- Chilean NSF Proposal Review, 2008.
- Oversea Ph.D. Dissertation External Examiner, 2009, U. of Canterbury, New Zealand.
- Oversea Thesis External Examiner, 2009, Kuwait University.
- Oversea Ph.D. Dissertation External Examiner, 2006, 2014, 2015. IIT, India.
- Canada NSERC Proposal Review, 2004, 2013, 2014

2015

- Plenary Talk, FSS2015, Int. Symposium on Fractional Signals and Systems, Romania
- Co-Organizer, FDTA2015 under ASME/IEEE MESA2015 at ASME IDETC/CIE 2015, Boston, MA, USA
- Co-Organizer, SUAVTA2015 under ASME/IEEE MESA2015 at ASME IDETC/CIE 2015, Boston, MA, USA
- Member, Executive Committee, ICUAS (2012-)
- Senior IPC member, ICAR 2015

2014

- General Co-Chair. ICUAS (International Conference on Unmanned Aircraft Systems) 2014. Orlando, FL.
- Co-Organizer, SUAVTA2014 under IEEE/ASME MESA2014, Senegal, Italy.
- Co-Organizer, FDTA2014 under IEEE/MESA MESA2014, Senegal, Italy.
- Chair, Steering Committee, ICFDA. Elected at ICFDA in Catania, Italy, June 2014.

2013:

- Invited Plenary Speaker. TOK (Turkish National Control Conference). Sept. 2013.
- Program Chair. ICUAS (International Conference on Unmanned Aircraft Systems) 2013. Atlanta, GA.
- Workshop Chair. ASME IDETC/CIE 2013. Portland, OR.
- Symposium Co-Chair. “Symposium on Small UAV Technologies and Applications” ASME/IEEE MESA13, part of ASME IDETC/CIE 2013. Portland, OR.
- Symposium Co-Chair. “Symposium on Fractional Derivatives and Their Applications” ASME/IEEE MESA13, part of ASME IDETC/CIE 2013. Portland, OR.
- Organizer and Moderator. Panel Session on “Mechatronics meets fractional calculus” (100 min.), ASME/IEEE MESA13, part of ASME IDETC/CIE 2013. Portland, OR.
- Executive Committee Member, ICUAS.com (2013-)
- Grant proposal review for Hong Kong GRC. Polish NSF. Danish NSF. Canada NSERC. (2013)
- USDA ad hoc grant reviewer. (Nov. 2012)
- Invited Panelist. NSF panel review. (Feb. 2013); Invited Panelist. NSF panel review. (May 2013)
- Member of IPC for several international conferences. (CCDC2013, ICIA2013, ICAMechS 2013, RED-UAS13, etc.)

2012:

- Steering Committee, IEEE/ASME Int Conf. on Mechatronics and Embedded Systems and Applications, Suzhou, China, July 8-10, 2012; <http://www.asmemesa.org>
- Honors and Awards Committee Chair. The 5th IFAC Fractional Differentiation and its Applications (FDA12). Nanjing, China, May 2012; <http://em.hhu.edu.cn/fda12/>
- Tutorial Workshop Chair. 2012 International Conference on Unmanned Aircraft Systems (ICUAS). Philadelphia, PA, 2012 <http://www.uasconferences.com/>
- Invited Session Co-Chair. CCDC 2012. <http://www.ccdc.neu.edu.cn/>
- Symposium co-chair. 4th SUAVTA, IEEE/ASME MESA 2012 (<http://www.asmemesa.org>)
- Program Committee Member
 - IFAC PID12; <http://pid12.ing.unibs.it/committees.html>
 - IEEE ISRCS2012; IEEE ICAL12; IEEE ICNSC2012; ICINCO 2012; ISNN12; ICC12 etc.

2011:

- Track Chair on Complex Networked Control Systems. IEEE ISRCS 2011. Boise, ID. <https://secureweb.inl.gov/ISRCS2010/presentations.aspx>
- Advisory Committee. 2011 International Conference on Unmanned Aircraft Systems (ICUAS). Denver Colorado USA May 24-27, 2011 <http://www.uasconferences.com/>
- Symposium Co-Chair/Organizer. ASME FDTA 2011 under ASME/IEEE MESA2010. <https://www.asmeconferences.org/IDETC2011/>
- Symposium Chair. 3rd SUAVTA under ASME/IEEE MESA2011. <https://www.asmeconferences.org/IDETC2011/>
- Invited Session Co-Chair. CCDC2011. The 2011 Chinese Control and Decision Conference (2011 CCDC) is the 23rd of the series, Mianyang, China in May 23-25, 2011. <http://www.ccdc.neu.edu.cn>
- IPC member, IEEE ISNN, 2011, Hong Kong, China, <http://isnn2011.mae.cuhk.edu.hk/>

2010:

- General Chair. IEEE/ASME Int. Conf. on Mechatronics and Embedded Systems and Applications (MESA2010), July 15-17, 2010, Qingdao, China, www.asmemesa.org
- Program Chair. International Program Committee. 4th IFAC Int. Workshop on Fractional Derivative and Applications (FDA2010), Spain. <http://web.tuke.sk/fda10/>
- Track Chair. Complex Networked Control Systems. International Symposium on Resilient Control Systems. August 12, 2010, Idaho Falls, ID, USA.
- Program Chair. Academic Day on Fractional Dynamics, Shanghai University, May 16-18, 2010.
- IPC member. 2010 IEEE MFI (multisensory fusion and integration), Salt Lake City, UT, USA, <http://www.cs.utah.edu/mfi2010/>
- IPC member. The 3rd International Symposium on Systems and Control in Aeronautics and Astronautics (ISSCAA 2010, <http://www.isscaa.net/> Harbin, China, June 08-10, 2010.
- Tutorial/Workshop Chair. Organizing Committee. The 4th Annual Electrical Power and Energy Conference (EPEC 2010), Halifax, NS, Canada, August 25-27, 2010.
- IPC member. IEEE ICCA, Xiamen, China, <http://www.ieee-icca.org/>
- IPC Member. IEEE ICNSC, 2010, Chicago, USA. <http://www.ezconf.net/icnsc10/>
- IPC member. IEEE ISNN, 2010, Shanghai, China, <http://isnn2010.sjtu.edu.cn/>
- Invited Session Co-Chair. The 22nd CCDC2010. May 26-28, 2010, Xuzhou, China. <http://www.ccdc.neu.edu.cn/>
- Workshop Co-Chair. The 8th WCICA, July 6-9, 2010, Jinan, China. <http://www.wcica.info/>
- IPC member. 2010 International Conference on Modeling, Identification and Control, Okayama City, Japan, July 17-19, 2010. <http://www.suri.sys.okayama-u.ac.jp/icmic2010>
- Workshop Co-Chair. IEEE ICIA. 2010 IEEE International Conference on Information and Automation, June 20 – 23, 2010, Harbin, Heilongjiang, China. <http://www.icia2010.org/>
- IPC member. ICARCV 2010, Singapore. www.icarcv.org/
- IPC member. IEEE CASE 2010, <http://www.case2010.org/>

2009:

- Program Chair. 2009 ASME/IEEE Mechatronic and Embedded Systems and Applications (MESA), San Diego, CA, August 30-Sept. 2, 2009. <http://iel.ucdavis.edu/mesa/MESA09/>
- Advisory Committee member. Symposium on Learning Control at IEEE CDC 2009. December 14-15, Shanghai 2009.
- Organizing Committee. IFAC Workshop on Networked Robotics. Golden, CO, USA. <http://control.mines.edu/netrob09/>
- Organizer. Whole day workshop. “Fractional Calculus Day @ Utah State University”. CSOIS. April 24, 2009. http://mechatronics.ece.usu.edu/foc/event/FOC_Day@USU/2009.html
- IPC member. IEEE CBMS. <http://cviat.ece.ttu.edu/cbms2009/>
- IPC member. IASTED CI 2009
- IPC member, IEEE ICCA, New Zealand, <http://www.ieee-icca.org/>
- IPC member. 2009 Fifth International Conference on Intelligent Sensors, Sensor Networks and Information Processing. Melbourne, Australia, <http://www.issnip.org/2009/>
- Symposium Co-Chair. The first Symp. On CPS (Cyber-Physical Systems) at MESA09, San Diego.
- Symposium Co-Chair. The first Symposium on Small Unmanned Aerial Vehicle Technologies and Applications (SUAVTA) at MESA09, San Diego.
- Organizer. Pre-Conference One-Day Workshop on “Fractional Calculus in Controls and Signal Processing”, 2009 American Control Conference. (www.a2c2.org/) (cancelled)
- Organizer. Tutorial Session on “Fractional Calculus in Controls and Signal Processing” during 2009 American Control Conference. (more info: <http://fractionalcalculus.googlepages.com>)
- Invited Session Co-Chair. Int. Conf. on Decision and Control in China (CCDC09), Guilin, China.

- Track Chair of Mechatronics. The 4th IEEE Conference on Industrial Electronics and Applications (ICIEA 2009) Xi'an, China. (www.ieeeicma.org)
- Tutorial/Workshop Co-Chair. IEEE ICMA2009. Changchun, China. (www.ieee-icma.org)
- IPC member. The 6th International Conference on Informatics in Control, Automation and Robotics. ICINCO 2009. Milan, Italy. <http://www.icinco.org/cfp.htm>
- IPC member. The 2009 IEEE Symposium on Approximate Dynamic Programming and Reinforcement Learning (ADPRL 2009) Nashville, Tennessee, USA, March 30 – April 2, 2009, as part of the SSCI 2009, <http://www.ieee-ssci.org/>
- IPC member. Sixth International Symposium on Neural Networks. ISNN2009. Wuhan, China. <http://www.easychair.org/conferences/?conf=isnn2009>

2008:

- Technical Program Chair, Members of Executive Committee. 2008-2009 ASME/IEEE Mechatronic and Embedded Systems and Applications (MESA) Committee. <http://iel.ucdavis.edu/mesa/>
- Member, International Program Committee. 3rd IFAC Int. Workshop on Fractional Derivative and Applications (FDA08), Turkey.
- Technical Program Co-Chair. 2008 Int. Conf. on Decision and Control in China (CCDC08), Yantai, China.
- Tutorial/Workshop Co-Chair. 2008 IEEE/ASME International Conference on Advanced Intelligent Mechatronics (AIM08), Xi'an, China.
- Tutorial/Workshop Co-Chair. 2008 IEEE International Conference on Mechatronics and Automation (ICMA08), Japan.
- IPC Member. The 7th World congress on Intelligent Control and Automation (WCICA'08), Chongqing China during June 25-27, 2008.
- IPC member. 2008 IEEE Conference on Soft Computing in Industrial Applications in Muroran, Japan, June 25-27, 2008.
- Program Committee member. 2008 IEEE International Conference on Networking, Sensing and Control (IEEE ICNSC'08), Sanya, China.
- Program Committee member. IEEE ISIC (International Symposium of Intelligent Control) track of the IEEE MSC2008, San Antonio, TX, USA, October 2008.
- IPC member. NSC08 – Conference on Nonlinear Science and Complexity, July 28-31, 2008, Porto, Portugal
- Track Chair,. The 3rd IEEE Conf. on Industrial Electronics & Apps (ICIEA08) 3-5 June 2008, Singapore.
- Co-Organizer. Invited Session on Iterative Learning Control. *The 10th International Conference on Control, Automation, Robotics and Vision*, ICARCV 2008, Hanoi, Vietnam, 17 – 20 December 2008.

2007:

- Organizer, Whole day workshop. “Fractional Calculus Day @ Utah State Univ.”. Sept. 3, 2007.
- Program Chair. ASME/IEEE Int. Conf. on Mechatronics, Embedded Systems and Applications (MESA07), 9/4-7, 2006, Las Vegas.
- Scientific Committee member. Symposium on Applied Fractional Calculus. Badajoz (Industrial Engineering School), Spain, October 15-17, 2007.
- Program Committee member. 2007 IEEE International Conference on Automation and Logistics (ICAL 2007), Jinan, Shandong, China, August 18–21, 2007.
- International Program Committee member. 8th International Carpathian Control Conference (ICCC). Hotel Patria, Štrbské Pleso, High Tatras, Slovak Republic on May 24-27, 2007.
- Technical Program Committee (TPC) member. 2007 IEEE Symposium on Computational Intelligence in Bioinformatics and Computational Biology (CIBCB 2007). Honolulu, Hawaii, USA, April 1-5, 2007.
- IPC member. 20th IEEE International Symposium on Computer-Based Medical Systems, Maribor, Slovenia, June 20-22, 2007.
- IPC member. ICINCO 2007. International Conference on Informatics in Control, Automation & Robotics

- Tutorial and Workshop Co-Chair, Member, International Program Committee. The 2007 IEEE International Conference on Robotics and Biomimetics (ROBIO 2007), Sanya, China, December 15 to 18, 2007.
- Track Chair of Mechatronics, 2007 IEEE International Conference on Industrial Electronics and Applications, Harbin, China.
- IPC Co-Chair, 2007 IEEE International Conference on Industrial Electronics and Applications ([IEEE ICMA07](#)), Harbin, China.
- IPC member. 2007 IEEE Int. Symposium on Approximate Dynamic Programming and Reinforcement Learning ([ADPRL07](#)), Hawaii, USA.
- IPC member. IEEE SMCia/07 workshop in Passau, Germany, on August 1 – 3, 2007.
- IPC member. The International Conference on Advanced Engineering Computing and Applications in Sciences (ADVCOMP 2007). November 4-9, 2007 – Papeete, French Polynesia (Tahiti).
- IPC member. IASTED International Conference on Computational Intelligence (CI 2007), Jul 02, 2007 to Jul 04, 2007, Banff, Canada.
- Review Co-Coordinator, 2007 ASME Int. Design Engineering Technical Conference and Computers and Information in Engineering (DETC/CIE) Conference. 6th Int. Conf. on Multibody Systems, Nonlinear Dynamics, and Control (MSNDC). MSNDC-14: Fractional Derivatives and Their Applications (FDTA07). Sept. 2007. Las Vegas, NV, USA.
- IPC member. CSI 2007. 10th Int. Conf. on Computer Science and Informatics with 8th Joint Conf. on Information Sciences (JCIS 2007) July 18 – 24, 2007, Salt Lake City, Utah.

2006:

- IPC member., The International Conference on Wireless Algorithms, Systems and Applications ([WASA06](#)), Xi'an China;
- Award Committee Chair. IEEE Mountain Workshop on Adaptive & Learning Systems ([SMC/ALS06](#)), Utah State Univ., Logan, 7/24-26/2006
- Program Committee member, 2006 IEEE Symposium on Computer-Based Medical Systems, Marriott Salt Lake City – City Center, Salt Lake City, Utah, USA, June 22-23, 2006. <http://CBMS2006.ece.byu.edu>
- Program Committee member, IEEE Int. Conf. On Networking, Sensing & Control (ICNSC06) Ft. Lauderdale, FL., U.S.A. April 23-25, 2006
- Tutorial and Workshops co-Chair, IEEE Int. Conf. on Information Acquisition (ICIA06), August 20 – 23, 2006, Shandong University, China.
- Program co-Chair. The 2006 IEEE Int. Conf. on Mechatronics & Automation, June 25-28, 2006 (ICMA06) Luoyang, Henan Province, China.
- IPC member, the 2nd IFAC Workshop on Fractional Differentiation and its Applications, 19-21 July, 2006, Porto, Portugal.
- IPC member. 9th Int. Conf. on Control, Automation, Robotics and Vision, ICARCV'06, Singapore, 5-8 Dec. 2006.

2005:

- Organizer. Whole day workshop. "Fractional Calculus Day @ Utah State University". CSOIS. April 19, 2005.
- IPC member. 7-th Computational Intelligence and Natural Computing (CINC05) with 8th Joint Conf. on Information Sciences (JCIS 2005) July 21 – 26, 2005, Salt Lake City, Utah.
- IPC member. CSI 2005. 8th Int. Conf. on Computer Science and Informatics with 8th Joint Conf. on Information Sciences (JCIS 2005) July 21 – 26, 2005, Salt Lake City, Utah.
- TPC member. Track 8: "Theory, Design and Implementation of Circuits & Systems". 2005 ICCAS, Hong Kong, China.
- Tutorials/Workshops Co-Chair. IEEE Int. Conf. on Information Acquisition (IEEE ICIA 2005), Hong

Kong/Macau, China. July 9 to 10 and the regular conference program at the Chinese University of Hong Kong from July 11 to 13, 2005.

- IPC member and Invited Session co-Chair, 2005 IEEE ICMA05, July 29-August 1, Niagara Falls, Ontario, Canada.
- Co-Chair, Special/Organized Sessions. 2005 IEEE/RSJ IROS05. August 2-6, 2005, Edmonton, Alberta, Canada.

2004:

- Reviewer Committee. IFAC Int. Workshop on Fractional Derivative and Applications (FDA04), July 19-21, 2004, Bordeaux, France.
- Technical Program Committee (TPC) member. 2004 International Conference on Communications, Circuits and Systems (ICCCAS04), June 28-June 30, 2004, Chengdu, Sichuan, China.
- IPC member. IEEE Int. Conf. Computational Cybernetics 2004 (ICCC04), Austria.
- Session Chair. Geometric and Computational Methods in Control American Control Conference 2004.

2003:

- IPC member. IEEE CIAC2003, Hong Kong, China; IEEE CIRA2003, Kobe, Japan.
- Session Chair and Session co-Chair. ASME DETC 2003. VIB. Chicago; Session co-Chair. IEEE CDC2003 (Program), Hawaii, USA.
- Founding Member of ASME subcommittee “*Fractional Dynamics*”. (2003, Chicago)
- Co-organizer and Instructor. Tutorial Workshop on “Fractional order calculus in control and robotics” at IEEE CDC’02, Las Vegas, NE, USA.
- Co-organizer. Invited Sessions on “Iterative Learning Control – Design & Applications”. 17th IEEE ISIC’02, Oct. 27-30, Vancouver, Canada.
- Reviewer. NSERC funding proposal, Canada, 2001. South Africa Science Foundation proposal review, 2005.
- Co-organizer. International Mini-Symposium on Iterative Learning Control, CSOIS, Utah State University, Logan, Nov. 2001.
- IPC member, IEEE CIRA 2001, July 29 – August 1, 2001, Banff, Alberta, Canada
- Panelist, “Panel discussions on iterative learning control”, The 3rd Asian Control Conference, Shanghai, China, July 2000.
- Co-organizer, Multiple Invited Sessions on “Iterative Learning Control” in the ICARCV’2000. Dec. 2000, Singapore.
- Reviewers for many journals and international conferences.
- Session chair/co-chair for many international conferences.

Professional Development Activities

- June 26, 2012. Control of Power Inverters for Renewable Energy and Distributed Generation [Power Inverters] Organizer: Qing-Chang Zhong <http://a2c2.org/conferences/acc2012/workshops.php>
- June 26, 2012. Health Management, Fault-tolerant Control, and Cooperative Control of Unmanned Aircraft [Unmanned Aircraft] Organizers: Youmin Zhang, Camille Alain Rabbath, YangQuan Chen, Christopher Edwards, Cameron Fulford, Hugh H.-T. Liu, Liang Tang, Didier Theilliol, and Antonios Tsourdos <http://a2c2.org/conferences/acc2012/workshops.php>
- Dec. 11, 2011. “[Traffic Modeling and Estimation at the Age of Smartphones: Leveraging Statistical Modeling and Optimal Control](#)”, full day workshop, IEEE CDC’11, Orlando, FL.
- Aug. 30-31, 2010. Invited Workshop. <http://www.DDDAS.org>
- Jun. 13, 2009. Workshop in honor of Professor B. Ross Barmish after American Control Conference. St. Louis, MO, USA. <http://www.personal.psu.edu/cml18/barmish60th/html/talks.html>
- Dec. 8, 2008, Tutorial Workshop on *Modeling, Estimation and Control in Neuroscience* Organized by Sridevi Sarma (MIT, USA), The 44th IEEE Conference on Decision and Control, Cancun, Mexico. (very gainful,

techniques around Deep Brain Stimulation)

- May 19-20, 2004. 5th Annual Edison Conference and Innovation Showcase. University of Utah, SLC.
- May 3-6, 2004. “Road Scholar”. USU President Hall’s Road Scholars 2004 Tour. South East Utah.
- Mar. 2003. NSF Junior Faculty Travel Grant for NSF Career Workshop at Tempe, Arizona.
- Jun. 2003. Travel grant from NCAR (National Center for Atmospheric Research), Junior Faculty Forum, Boulder, CO. <http://www.asp.ucar.edu/ecsa/announce.html>
- Jun. 2002, Course Design & Development Workshop. Office of Instructional Support, Utah State University.
- Dec. 2001, Tutorial Workshop on *Networked Autonomous and Semi-autonomous Vehicles*, The 40th IEEE Conference on Decision and Control, Hyatt Regency Grand Cypress Resort in Orlando, Florida. (Given by UC Berkeley PATH people, interesting talks)
- Mar. 2000-July 2000, DFSS – Design for Six Sigma Green Belt Certification Training (80 hours), Seagate Technology International, Singapore.

Grants and Funding History
(Grants in color are for UC Merced)

Year	Sponsor	PI/Co-PI	Project Title	Amount total	Amount responsible
2015-2018	PHMSA/ NYSEARCH	PI	The methane detection device project	\$300,000	\$300,000 (pending)
2015	JPL	PI	Implement Methane Sniffer on UC Merced Fixed-Wing sUAS	\$30,000	\$30,000 (pending)
2015	PG&E	PI	Applicability of Unmanned Aerial Systems for Leak Detection	\$50,000	\$50,000 (pending)
2014-2015	The Nature Conservancy	PI	Staten Island Migratory Crane Counting Using UAV-based Thermal Infrared Imaging	\$18,000	\$18,000
2014-2019	UC ANR	PI of UC Merced	Evaluating and extending the use of small, multi-rotor unmanned aerial vehicles (UAV's) as a crop monitoring tool	\$279,580	\$144,000
2014-2015	UC Merced HSRI	Co-PI	Developing autonomous airborne pathogen collection and identification capability for mapping Valley Fever risk in the San Joaquin Valley	\$8,000	\$4,000
2014-2015	UC CITRIS	PI	Environmental DNA (eDNA) Smart Sampling Using Unmanned Aerial Vehicles (UAV)	\$60,000	\$30,000
2014-2015	LAM Research	PI	Cognitive Process Control	\$90,000 (Year-2)	\$93,744 (Year-2)
2012-2014	NASA Subcontract via Utah State University	PI	NASA UAS2NAS “Cognitive autopilot techniques and flight evaluation for integrating low cost personal remote sensing UAVs in the national airspace system”	\$300,000	\$80,000

2013-2014	LAM Research	PI	Cognitive Process Control	\$450,000	\$90,000 (Year-1)
2011-2012	SDL USURF	PI	SDL “New fractional order maximal power point tracking controller for small satellite photovoltaic panels”	\$35,000	\$35,000
2011-2012	NSF	PI	NSF “RAPID: Low Cost Personal Remote Sensing for Cognitive Disaster Assessment with Enhanced Human-Machine Interface”	\$49,999	\$49,999
2010-2013	DOE	Co-PI	“Automatic Electric Transportation” (PI: Dr. Kevin Heaslip)	\$947,000	\$270,000
2011-2012	UWRL	PI	Utah Water Research Laboratory (UWRL) MLF Seed Grant: “Ultra light, High Grain UAV Fish Tracking Antennas” (year-2)	\$37,085	\$37,085
2011-2012	UWRL	PI	Utah Water Research Laboratory (UWRL) MLF Seed Grant: “Low Cost Vertical Take Off and Landing Personal Remote Sensing Systems for Water Engineering: AggieVTOL” (year-2)	\$49,154	\$49,154
2011-2012	UWRL	PI	Utah Water Research Laboratory (UWRL) MLF Seed Grant: “Multispectral UAV Collaborative Remote Sensing System for Irrigation Water Management and Ecological Assessment” (year-5)	\$79,963	\$79,963
2011-2014	NIDRR	Co-PI	National Institute on Disability & Rehabilitation Research. “Experimental Research on Pedestrian and Evacuation Behaviors of Individuals with Disabilities; Theory Development Necessary to Characterize Individual-Based Models” (PI: Dr. Keith Christensen)	\$594,486	\$200,000
2011-2014	NASA	PI	NASA UAS2NAS “Cognitive autopilot techniques and flight evaluation for integrating low cost personal remote sensing UAVs in the national airspace system”	\$300,000	\$300,000
2010-	UWRL	PI	Utah Water Research	\$38,000	\$38,000

2011			Laboratory (UWRL) MLF Seed Grant: "Ultra light, High Grain UAV Fish Tracking Antennas" (year-1)		
2011	USU	PI	AUVSI Competition travel grant from Dean's Office, College of Engineering, USU	\$5,000	\$5,000
2011	SDL	PI	AUVSI Competition travel grant from Space Dynamics Laboratory, USU	\$2,500	\$2,500
2011	Samsung	PI	"SISA-USU R&D Partnership in High TPI Harddisk Drives" (Year 1 of 5)	\$20,000	\$20,000
2010-2011	UWRL	PI	Utah Water Research Laboratory (UWRL) MLF Seed Grant: "Multispectral UAV Collaborative Remote Sensing System for Irrigation Water Management and Ecological Assessment" (year-4)	\$102,185	\$102,185
2010	Samsung	PI	"Performance Improvement Techniques in High TPI Harddisk Drives"	\$79,212	\$79,212
2010	Samsung	PI	"Harnessing Fractional Order Control Techniques in Harddisk Servo"	\$43,371	\$43,371
2009-2010	Dean's Office	PI	Postdoc Research Support. Dean's Office, College of Engineering, USU	\$35,000	\$35,000
2010	USU TCO USTAR	Co-PI	ARRA USTAR TCG (technology commercialization grant) "USU AggieAir: Flying Networked Sensors for Collaborative Multispectral Remote Sensing"	\$49,673	\$49,673
2010-2011	UWRL	PI	Postdoc support for UAV research	\$35,000	\$35,000
2010-2011	UWRL	PI	Utah Water Research Laboratory (UWRL) MLF Seed Grant: "Low Cost Vertical Take Off and Landing Personal Remote Sensing Systems for Water Engineering: AggieVTOL" (year-1)	\$82,000	\$82,000
2010	USU	PI	AUVSI Competition travel grant from Dean's Office, College of Engineering, USU	\$5,000	\$5,000
2009	USU	PI	AUVSI Competition travel grant from Dean's Office, College of Engineering, USU	\$5,000	\$5,000

2009-2010	EAFB	PI	AUVSI Competition grant from Edwards Air Force Base	\$6,000	\$6,000
2009-2012	NSF	PI	NSF REU Site: "Mobile Actuator and Sensor Networks"	\$282,789	\$282,789
2008-2009	UWRL	PI	Utah Water Research Laboratory (UWRL) MLF Seed Grant: "Multispectral UAV Collaborative Remote Sensing System for Irrigation Water Management and Ecological Assessment" (year-3)	\$104,000	\$104,000
2008	USU	PI	AUVSI Competition travel grant from Dean's Office, College of Engineering, USU	\$5,000	\$5,000
2007-2008	DOI	PI	Dept. of Interior (DOI) "Water 2025" project "Scipio water user association and irrigation management"	\$30,000	\$30,000
2007-2008	UWRL	PI	Utah Water Research Laboratory (UWRL) MLF Seed Grant: "Multispectral UAV Collaborative Remote Sensing System for Irrigation Water Management and Ecological Assessment" (year-2)	\$88,175	\$88,175
2006-2010	NASA	PI	NASA AIST "Adaptive Algorithms for Optimal Classification and Compression of Hyperspectral Images" (PI transferred from Dr Tamal Bose)	\$436,710	\$15,000
2006-2007	UWRL	PI	Utah Water Research Laboratory (UWRL) MLF Seed Grant: "Multispectral UAV Collaborative Remote Sensing System for Irrigation Water Management and Ecological Assessment" (year-1)	\$127,451	\$127,451
2006-2007	UWRL	PI	Utah Water Research Laboratory (UWRL) MLF Seed Grant: "Scipio realtime irrigation control"	\$32,675	\$32,675
2006-2009	NIH (R15)	Co-PI	NIH (R15) "Whole Cell Biosensing of Bacterial Chemotaxis"	\$214,500	\$20,000
2006	NSF SBIR	PI	NSF SBIR grant subcontract from Wavelength Electronics "True Fractional Order Device: Fractor"	\$15,000	\$15,000

2007	NSF	PI	NSF IREE. "Optimal interlaced distributed control and distributed measurement with networked mobile actuators and sensors"	\$29,000	\$29,000
2006-2009	NSF	PI	NSF REU Site: "Mobile Actuator and Sensor Networks"	\$229,035	\$229,035
2006-2007	NSF	PI	DDDAS/SEP. "Optimal interlaced distributed control and distributed measurement with networked mobile actuators and sensors"	\$42,000	\$42,000
2005-2006	USU SDL	PI	USURF Space Dynamics Laboratory (SDL) Skunkworks Research Initiative Fund. "Temperature uniformity control"	\$17,500	\$17,500
2005-2006	USU SDL	PI	USURF Space Dynamics Laboratory (SDL) Skunkworks Research Initiative Fund. "Fractional order signal processing for bioelectrochemical sensors"	\$17,500	\$17,500
2005-2006	USU VPR	PI	Community and University Research Initiative (CURI) grant "Chemotaxis Behavior in Mobile Actuator and Sensor Networks for Environmental Monitoring"	\$20,000	\$20,000
2005	DesignJug	PI	"Vision-Based Road Detection and Tracking for an Autonomous Vehicle Platform", DesignJug team support for DARPA Grand Challenge	\$12,000	\$12,000
2005	USURF TCO	PI	USU TCO Technology Bridge Grant "Fractional Order Control Tuning Methods"	\$13,910	\$13,910
2004	Cornice LLC	PI	"Advanced repeatable runout compensation in micro hard disk drives"	\$51,000	\$51,000
2004	NSF	Co-PI	US-France Workshop on Fractional Derivatives and Their Applications. NSF Workshop grant (Post IFAC FDA'04, Bordeaux, France) (PI: Dr. Om Agrawal)	\$16,000	\$3,000
2004-2006	NSF	Co-PI	NSF NUE (Nano Undergraduate Education)	\$100,000	\$20,000

			Grant. (PI: Dr. Haeyang Yang)		
2003-2004	Private	PI	Donation to further develop "RIOTS_95 package for solving general purpose optimal control problems in MATLAB."	\$4,000	\$4,000
2003-2004	SDL	PI	USURF Space Dynamics Laboratory (SDL) Skunkworks Research Initiative Fund. "Mobile Sensor and Actuator Networks"	\$15,000	\$15,000
2003-2005	NRC	PI	National Research Council Twinning Grant with Technical University of Kosice, Slovakia. "Application of fractional calculus in engineering and applied sciences"	\$16,000	\$16,000
2003-2004	USU FACT	PI	"Real-time Tele-lab implementation and demonstration using Quanser TeleLab"	\$12,000	\$12,000
2003	NCAR	PI	Travel grant from National Center for Atmospheric Research (NCAR), Junior Faculty Forum. June 2003, Boulder, CO.	\$2,000	\$2,000
2003	NSF	PI	NSF Junior Faculty Travel Grant for NSF Career Workshop at Tempe, Arizona.	\$700	\$700
2002-2003	Utah State University	PI	USU New Faculty Research Grant. "Tuning methods for fractional order PI/PID controllers"	\$10,100	\$10,100
			Total	\$4,464,710	\$2,684,014
			Current active funding	\$2,012,724	\$1,021,201

Workshops and Short Courses Offered/Organized:

1. Blas M. Vinagre and YangQuan Chen. 2002. "Lecture Notes for the Tutorial Workshop on Fractional Order Calculus in Control and Robotics at IEEE CDC2002 Las Vegas". Published online. Distributed at the IEEE CDC Tutorial Workshop. Las Vegas, Dec. 2002. (316pages)
2. 06/13/2003. "[Parsimonious ILC and RC: Seagate Experience](#)" (Tutorial Lecture) at the first [Iterative Learning Control](#) International Summer School at Utah State University (See other presentations and photos [here](#)) (half day)
3. YangQuan Chen. "Task-Oriented Mobile Actuator and Sensor Networks". IEEE/RSJ IROS2005 Full Day Tutorial Workshop slide set. August 2, 2005. Edmonton (with Hairong Qi and Kevin L. Moore) (A Full Day)
4. FOC Day @ USU, April 19, 2005. "Fractional Order Calculus Day at Utah State University". Full day workshop. http://mechatronics.ece.usu.edu/foc/event/FOC_Day@USU/
5. YangQuan Chen. Iterative Learning Control: from Academia to Industry – An expository tutorial. IEEE

- ICMA2005 Half Day Tutorial Workshop slide set, Niagara Falls, Canada, July 29, 2005. (with Hyosung Ahn and Kevin L. Moore) (Half day)
6. June 25, 2006. Tutorial workshop at IEEE ICMA2006, Luoyang, China. "[Fractional Order Calculus and Its Applications in Mechatronic System Controls](#)" (Half day)
 7. June 25, 2006. Tutorial workshop at IEEE ICMA2006, Luoyang, China. "[Cooperative Control and Consensus Building for Multiple Autonomous Vehicles](#)" (Half day)
 8. June 25, 2006. Tutorial workshop at IEEE ICMA2006, Luoyang, China. "[Iterative Learning Control: Algebraic Analysis and Optimal Design](#)" (all slides are [here](#)) (Half day)
 9. Dec. 2006. IEEE CDC2006, Industrial Tutorial Session on "Iterative learning control and repetitive control in hard disk drive industry". San Diego, California, USA (2 hours)
 10. December 8, 2006. Friday 9AM-5PM. International Mini-Workshop on DDDAS (Dynamic Data Driven Application Systems) "Optimal measurement and control of distributed parameter systems using mobile actuator and sensor networks". <http://mechatronics.ece.usu.edu/mas-net/dddas/> Full day workshop.
 11. FOC Day @ USU, Sept. 3, 2007. "*Fractional Order Calculus Day at Utah State University*". Full day workshop.
 12. Tutorial Session "Applied Fractional Calculus in Controls", 2009 American Control Conference, June 10-12, 2009, St. Louis, Missouri, USA. <http://fractionalcalculus.googlepages.com/>
 13. Pre-conference Workshop. "Applied Fractional Calculus in Controls and Signal Processing", 2009 American Control Conference, June 10-12, 2009, St. Louis, Missouri, USA. <http://fractionalcalculus.googlepages.com/> (cancelled, also by IEEE CDC2009)
 14. FOC Day @ USU, April 24, 2009. "*Fractional Order Calculus Day at Utah State University*". Full day workshop. (Dr. Bruce J. West's visit, 3 seminars given by Dr. West).
 15. Co-Organizer and Co-Instructor. July 6, 2010. Pre-Conference Tutorial Workshop. One Full Day Workshop on "Fractional Order Dynamic Systems and Controls" at WCICA2010, Jinan, Shandong, China. Web: <http://mechatronics.ece.usu.edu/foc/wcica2010tw/>
 16. Organizer and Co-Instructor. 12/14/2010. Pre-Conference Tutorial Workshop. One Full Day Workshop on "Applied Fractional Calculus in Controls and Signal Processing" at IEEE CDC2010, Atlanta, GA, USA. Web: <http://mechatronics.ece.usu.edu/foc/cdc10tw/>
 17. Invited Tutorial at 2011 ICUAS (Int. Conf. on Unmanned Aerial Systems) (full day) on May 24th, 2011, Denver, CO., on "*Multi-UAV Based Multi-Spectrum Collaborative Personal Remote Sensing: Concepts, Platform & Applications*"
 18. FOC Day @ USU, August 22, 2011. "*Fractional Order Calculus Day at Utah State University*". Full day workshop. (Dr. Igor Podlubny and Dr. Ivo Petras's visit). <http://mechatronics.ece.usu.edu/foc/afc/>
 19. Invited Tutorial at 2012 ICUAS (Int. Conf. on Unmanned Aerial Systems) (full day) on June 12th, 2012, Philadelphia, PA., on "*Low-cost UAV-based precision thermal infrared (TIR) mapping - A new Personal Remote Sensing capability: UAV platform, TIR payload, in-flight calibration and applications.*"
 20. June 26, 2012. Health Management, Fault-tolerant Control, and Cooperative Control of Unmanned Aircraft [Unmanned Aircraft] Organizers: Youmin Zhang, Camille Alain Rabbath, YangQuan Chen, Christopher Edwards, Cameron Fulford, Hugh H.-T. Liu, Liang Tang, Didier Theilliol, and Antonios Tsourdos <http://a2c2.org/conferences/acc2012/workshops.php>
 21. May 28, 2013. Y.Q. Chen, Brandon Stark, A. Jenson, and C. Coopmans. *SUAS Airworthiness, Architecture, and Human Factors*. Invited Half-Day Tutorial at 2013 ICUAS, Atlanta, GA, USA.
 22. June 10, 2013. YangQuan Chen. "Connections, Optimal Random Search, More Optimal Image Processing, Cross-scale Dynamics". Fractional Fractional Calculus Day @ CSOIS Utah State University. 1:00-5:30
 23. June 12, 2013. YangQuan Chen. Organizer. Fractional Calculus Day @ UC Merced. (International speakers: Profs. Francesco Mainardi and Igor Podlubny) <http://mechatronics.ucmerced.edu/node/68> Full day.
 24. August 2, 2013. YangQuan Chen. Organizer. "[Drones, Mechatronics and Fractional Calculus](#)" –[MESA LAB 2013 Mid-Summer Symposium](#). (International speakers: Profs. Primo Zingaretti and Malgorzata Klimek). Full day.
 25. August 4, 2013. YangQuan Chen. Organizer. Half-day pre-conference workshop. "W5: Personalizing

- Mechatronics Education Utilizing an Open-Source Real-Time Control System Rapid Prototyping Platform”. ASME IDETC/CIE 2013, Portland, Oregon Convention Center.
26. August 4, 2013. YangQuan Chen. Organizer. Half-day pre-conference workshop. “W7: Fractional Order Motion Controls: How Motion Control Can Benefit from Using Fractional Calculus?”. ASME IDETC/CIE 2013, Portland, Oregon Convention Center.
 27. August 4, 2013. YangQuan Chen. Organizer. Full-day pre-conference workshop. “W6: Fractional Order Mechanics — An Introduction of An Emerging Research Field”. ASME IDETC/CIE 2013, Portland, Oregon Convention Center.
 28. Sept. 25, 2013. YangQuan Chen. Organizer and Instructor. A Tutorial on Fractional Order Motion Control. Turkish National Meeting on Automatic Control (TOK 2013) , Sept. 25, 2013, Malatya, Turkey. (half day tutorial workshop)
 29. Aug. 23, 2014. Half-Day Pre-Conference Tutorial. “Personalising Mechatronics Control Education Utilising an Open-Source Real-Time Control System Rapid Prototyping Platform”. IFAC World Congress. Cape Town, South Africa. (Brandon Stark/YangQuan Chen)
 30. Aug. 23, 2014. YangQuan Chen. Organizer and Instructor. Half-Day Pre-Conference Tutorial. “Fractional Order Motion Controls: How Motion Control Can Benefit from using Fractional Calculus?”. IFAC World Congress. Cape Town, South Africa.
 31. 05/27/14. Co-Organizer. Instructor. “Emerging sUAS Technology for Precision Agriculture Applications (AgDroneTech14)” (with Reza Ehsani) (Half-Day Pre-Conference Tutorial Workshop)
 32. 05/27/14. Co-Organizer. Instructor. “Remote Sensing of Actionable Scientific Information Using sUAS” (with Drs. Cal Coopmans and Austin Jensen) (Half-Day Pre-Conference Tutorial Workshop)
 33. 06/02/14. Organizer. Fractional Calculus Day at UC Merced 2014 Edition cum The Fourth AFC Workshop @ MESA LAB @ UC MERCED. Full Day.
 34. 08/11/14. Organizer. Prof. Igor Podlubny Workshop. Full day.
 35. 12/15-12/19/14. Instructor. SCUT Tutorial Lecture Series of Applied Fractional Calculus, Guangzhou, China. (4 modules: Introduction to Fractional Calculus: What it is and why we should all care; Fractional Order Modeling of Complex Phenomena; More Optimal Fractional Order Signal Processing; Fractional Order Mechanics: Introduction to a new course at UC Merced)
 36. 12/19/14. Keynote. Fractional Calculus Day at South China University of Technology, Guangzhou, China.
 37. 01/05/15. Keynote. Fractional Calculus Day at Northeastern University, Shenyang, China.
 38. 08/02/15. Half-Day Tutorial Workshop “Fractional Order Mechanics” at ASME IDETC/CIE 2015, Boston, MA. (accepted)

Invited Seminar/Talks:

- June 1999. "An overview of iterative learning control research," Dept. of Electrical Engineering, Univ. of Alaska at Fairbanks;
- June 1999. "Aerodynamic drag curve identification: optimal dynamic fitting and iterative learning approaches," Dept. of Electrical Engineering, Univ. of Alaska at Fairbanks;
- April 2000. "Frictional force on the high precision servo control". First Seagate Singapore TEC Symposium, Singapore;
- July 2000. "Perspectives in Iterative Learning Control”, 3rd Asian Control Conference, Shanghai, China.
- April 2001. “Fractional order calculus and its applications in systems control - an overview”, Department of Electrical Engineering, Univ. of Alberta, Canada.
- May 2001. “Fractional order calculus and its applications in signal processing and systems control - an overview”, Department of Electrical Engineering, Univ. of Calgary, Canada.
- June 14, 2001. "Iterative Learning Control": From Academia to Industry”. Dept. of Electrical and Computer Engineering, The University of Windsor, Canada.
- June 14, 2001. “Fractional order calculus and its applications in systems control - an overview.” Dept. of Electrical and Computer Engineering, The University of Windsor, Canada.
- Nov.6, 2003. USU Department of Mathematics [Colloquium](#): Fractional-order Calculus, Fractional-order Filter

- and Fractional-order Control: An Overview & Some Recent Developments. ([PDF slides](#))
- 06/13/2003. [Parsimonious ILC and RC: Seagate Experience](#) (Tutorial Lecture) at the first [Iterative Learning Control](#) International Summer School at [Utah State University](#) (See other presentations and photos [here](#))
 - 06/17/2003. [Some Servo Patents for Low Cost High TPI Hard Disk Drives](#) [abstract/bio](#). The Colorado Center for Information Storage, the University of Colorado, Boulder
 - 03/05/2003. USU [ECE6800](#) Seminar by [Dr YangQuan Chen](#) on FOC. Fractional order calculus, fractional order filter and fractional order control: an over view and some recent developments. Check [here](#) for PDF slides.
 - 03/28/2003. Une proposition pour la synthèse de correcteurs PI d'ordre non entier. YangQuan Chen (Utah State University, USA), Concepción A. Monje, Blas M. Vinagre (Universidad de Extremadura, Espagne). (Slides [PDF](#)) [Action thématique "Les systèmes à dérivées non entières"](#) - [LAP](#) - [ENSEIRB](#), Bordeaux.
 - 10/17/2003. Réalisation analogique de l'opérateur de dérivation non entière. C. Tricaud (ENSEIRB – Université Bordeaux 1) and YangQuan Chen (Utah State University, USA). (Slides [PDF](#)) [Action thématique "Les systèmes à dérivées non entières"](#) - [LAP](#) - [ENSEIRB](#), Bordeaux.
 - May 19, 2004. The Innovation Showcase, [The Edison Conference](#), Univ. of Utah, SLC. ([Program.pdf](#), see Booth #44)
 - 07/22/2004. "Fractional Future?" A Panel Discussion at the 2004 NSF Sponsored Joint US-France Workshop, Bordeaux, France.
 - 08/17/2004. "Mobile actuator and sensor networks for diffusion boundary determination and zone control", Invited talk (75 minutes) at the Institute of Intelligent Machines of Chinese Academy of Sciences (IIM of CAS) in Hefei, the capital city of Anhui Province, China.
 - 08/19/2004. "Iterative Learning Control: from Academia to Industry". Invited Seminar (75 minutes) at the Department of Automatic Control, Southeast University, Nanjing, the capital city of Jiangsu Province, China.
 - 08/20/2004. "Fractional order control" (75 minutes) Invited Seminar at Institute of Robotics and Artificial Intelligence, Northeastern University, Shenyang, capital city of Liaoning Province, China.
 - 2/25/05. ECE Dept. IAC meeting, presentation of "CSOIS: Past, Present, and Future cum MAS-net". Lab tour/Demo.
 - 4/5/2005. [ECE6800](#) seminar. [Task Oriented Mobile Actuator and Sensor Networks \(TOMAS-net\)](#)
 - 9/28/2005. Fractional Order Control. San Diego Section of IEEE Control Systems Society.
 - 10/20/2005. About CSOIS. USU VPR and State of Utah UStar delegate.
 - 11/4/2005. USU Dept. of Civil and Environmental Engineering, Transportation Research Seminar Series. "Task Oriented Mobile Actuator and Sensor Networks".
 - March 14, 2006. "Non-Integer-Order Calculus, Dynamic Systems, Control and Signal Processing - An Introduction". The Engineering Division Seminar on Automation and Sensing, Colorado School of Mines.
 - March 16, 2006. "Interlaced Distributed Control and Distributed Measurement with Mobile Actuator/Sensor Networks (MAS-net): An example of DDDAS". The Center for Automation, Robotics, and Distributed Intelligence (CARDI), Colorado School of Mines.
 - June 16, 2006. "HDD servo - All smart ideas tried?!", Seagate SHK Design Center. Minneapolis, MN. (During ACC2006)
 - July 6, 2006. "Interlaced Distributed Control and Distributed Measurement with Mobile Actuator/Sensor Networks (MAS-net): An example of DDDAS". Robotics Center, Beijing Institute of Technology, China.
 - July 7, 2006. "Non-Integer-Order Calculus, Dynamic Systems, Control and Signal Processing - An Introduction". Dept. of Automatic Control, Beijing Institute of Technology, China.
 - July 21, 2006. "Ubiquitous fractional order controls". IFAC FDA06 Plenary lecture. ([slides](#), [12 pages plenary article](#)) Porto, Portugal.
 - May 2007. Special Invited Talks. "Fractional Order Calculus and Its Applications in Mechatronics and Power Electronics - An Introduction". The 2nd IEEE Conference on Industrial Electronics and Applications (ICIEA 2007) 23-25 May 2007, Shangri-la Hotel, Harbin, China. <http://iciea2007.cipsterdesign.com/>
 - Fall 2007. USU ECE Colloquium. "An Overview of Fractional Order Signal Processing (FOSP) Techniques".

- March 2008. Invited Seminar. “Mobile Actuator and Sensor Networks (MAS-net)” Worcester Polytechnic Institute.
- March 2008. Invited Seminar. “Fractional Order Thinking at The Edge - from Mechatronics to Biomechatronics to Bioengineering.” Computer Engineering Division, UC Santa Cruz.
- Sept. 2008. USU ECE Colloquium. “Mobile Actuator and Sensor Networks (MAS-net) for Cyber-Physical Systems (CPS)”.
- Nov. 2008. Plenary Lecture “Fractional Order Signal Processing - Techniques, Applications and Urgency” 3rd IFAC Workshop on Fractional Differentiation and its Applications, Ankara, Turkey, 05 - 07 November, 2008.
- Nov. 2008. Invited Seminar. “Mobile Actuator and Sensor Networks (MAS-net) for Cyber-Physical Systems (CPS)”. ECE Dept. of University of New Orleans, New Orleans, Louisiana, USA.
- 2009: Jan. 13. ECE 6800 Graduate Colloquium. “Fractional Order Motion Controls and Fractional Order Networked Control Systems”. Utah State University.
- 2009: March 13. UC Berkeley Invited Seminar. “Fractional order thinking: from mechatronics to biomechatronics and beyond”.
- 2009: May 27. Semi-Plenary Speaker. The 4th IEEE Conference on Industrial Electronics and Applications (ICIEA 2009), Xi’an, China.
- 5/21/2009: Invited Seminar. “Towards fractional order thinking and engineering.” Nantong University (NTU), Jiangsu Province, China.
- 5/21/2009: Invited Seminar. “Towards fractional order thinking and engineering.” Hohai University (HHU), Nanjing, China. Part of the “Mini-symposium on Fractional Dynamics” Organized by Prof. Wen Chen.
- 5/22/2009: Invited Seminar. “Towards fractional order thinking and engineering.” Nanjing Institute of Technology (NJIT), Nanjing, China.
- 5/22/2009: Invited Seminar. “Iterative Learning Control: A Tutorial and from Academia to Industry.” Nanjing Institute of Technology (NJIT), Nanjing, China.
- 5/26/2009: Invited Seminar. “Towards fractional order thinking and engineering.” Xi’an Technological University (XATU), Xi’an, China.
- 5/26/2009: Invited Seminar. “Fractional Order Signal Processing - Techniques, Applications and Urgency”. Xidian University, Xi’an, China.
- 5/28/2009. Invited Seminar. “An Overview of USU Unmanned Aerial Vehicle Research Program”. Northwestern Forest & Agriculture Univ. (NWF&AU), Yangling, Shaanxi Province, China.
- 5/28/2009. Invited Seminar. “Mobile Actuator and Sensor Networks (MAS-net) for Cyber-Physical Systems (CPS)”. Northwestern Forest & Agriculture Univ. (NWF&AU), Yangling, Shaanxi Province, China.
- 6/1/2009: Invited Seminar. “Mobile Actuator and Sensor Networks (MAS-net) for Cyber-Physical Systems (CPS)”. South China University of Technology (SCUT), Guangzhou, China.
- 6/3/2009. Invited Seminar. “Iterative Learning Control: A Tutorial and What’s Next.” Beijing Jiao Tong University (BJTU), Beijing, China.
- 6/21/2009. Invited Presentation. “YangQuan Chen, Ph.D.” - King Abdullah University of Science and Technology (KAUST), Saudi Arabia.
- 7/10/2009. Invited Seminar. “Mobile Actuator and Sensor Networks (MAS-net) for Cyber-Physical Systems (CPS)”. UT Dallas Erik Jonsson School of Engineering and Computer Science.
<http://www.ee.utdallas.edu/events/chen.html>
- 11/5/2009. Invited Seminar. “Mobile Actuator and Sensor Networks (MAS-net) for Cyber-Physical Systems (CPS)”. Dept. of Mechanical Engineering, University of Nevada Las Vegas.
- 7/8/2010. Invited Seminar. “Fractional Order Thinking and Engineering”. Shandong University, Math Institute, Jinan, Shandong, China.
- 7/26/2010. Invited Seminar. “Fractional Order Thinking: from Controls to Signal Processing”. Samsung SISA, San Jose, CA, USA.
- Invited Seminar. 02/04/2011. “Mobile Actuator and Sensor Networks (MAS-net) for Cyber-Physical Systems

- (CPS)". Center for New Energy Systems, University of Pretoria, South Africa.
- Invited Seminar. 03/04/2011. "Fractional Order Thinking – from control, signal processing to energy informatics and beyond". Center for New Energy Systems, University of Pretoria, South Africa.
 - Invited Seminar. 04/18/2011. "Gegenbauer processes and energy informatics". Center for New Energy Systems, University of Pretoria, South Africa.
 - Invited Seminar. 05/02/2011. "A Tutorial on RIOTS_95 – A MATLAB Toolbox for Solving Optimal Control Problems in General Form". Center for New Energy Systems, University of Pretoria, South Africa.
 - Invited Seminar. 10/21/2011. "Fractional Order Thinking – from control, signal processing to energy informatics and beyond" UC Berkeley, Tomizuka Lab.
 - EE Colloquium. 11/15/2011. "[An Introduction to Fractional Order Modeling and an Application in Characterizing Complex Relaxation Processes](#)", ECE Dept. of Utah State University.
 - Invited Seminar. 2/14/2012. "Smart Mechatronics: Mobile Actuator/Sensor Networks (MAS-net) for Cyber-Physical Systems", UC Merced.
 - Invited Seminar. 3/13/2012. "Cognitive Process Controls", Lam Research, California.
 - EE Colloquium. 4/3/2012. "[Cognitive Process Controls for Sustainable Semiconductor Manufacturing](#)" ECE Dept. of Utah State University.
 - Invited Seminar. 5/17/2012. "Fractional Order Modeling of Complex Processes", Nanjing Institute of Technology (NJIT), Nanjing, China.
 - Invited Seminar. 5/21/2012. "An Introduction to Fractional Order Modeling & an Application in Characterizing Complex Relaxation Processes," Math Dept. of the School of Sciences, Shanghai University. (Talk after Francesco Mainardi)
 - Invited Seminar. 5/22/2012. "Fractional Order Modeling of Complex Processes", Applied Math Dept., Donghua University, Shanghai, China
 - Invited Tutorial at 2012 ICUAS (Int. Conf. on Unmanned Aerial Systems) (full day) on June 12th, 2012, Philadelphia, PA., on "*Low-cost UAV-based precision thermal infrared (TIR) mapping - A new Personal Remote Sensing capability: UAV platform, TIR payload, in-flight calibration and applications.*"
 - June 26, 2012. Health Management, Fault-tolerant Control, and Cooperative Control of Unmanned Aircraft [Unmanned Aircraft] Organizers: Youmin Zhang, Camille Alain Rabbath, YangQuan Chen, Christopher Edwards, Cameron Fulford, Hugh H.-T. Liu, Liang Tang, Didier Theilliol, and Antonios Tsourdos <http://a2c2.org/conferences/acc2012/workshops.php>
 - YangQuan Chen. Fractional Order Thinking. EECS SEMINAR. **Sept. 7, 2012**. Friday 12:00-13:20 COB 267
 - YangQuan Chen. Fractional Order Modeling: A Tutorial Introduction and An Application in Characterizing Complex Relaxation Processes. EECS SEMINAR. **Sept. 14, 2012**. Friday 12:00-13:20 COB 267.
 - YangQuan Chen. "Unmanned Aerial Vehicles When We Can File-n-Fly ?!" **Oct. 03, 2012**. Wednesday 12:30-13:20. UC Merced SoE Professional Seminar.
 - YangQuan Chen. Mechatronics for Sustainability: UAVs for Water, Environment, Renewable Energy, and Precision Agriculture. Dean's EAB Presentation. **Oct. 12, 2012**. Friday 2:00-2:30. SoE EAB Meeting Fall 2012. Schneider Electric, Fresno, 3500 Pelco Way, Clovis, CA 93612
 - YangQuan Chen. Fractional order Mechanics why, what and when? **Oct. 30, 2012**. MESA LAB.
 - YangQuan Chen. "Unmanned Aerial Vehicles When We Can File-n-Fly ?!" **Nov. 09, 2012**. Friday 7:15-7:45PM. UC Merced Robotics Society AfterShock event.
 - YangQuan Chen. "A Fractional Journey". Academic Excellence Night. Student Clubs, School of Engineering, UC Merced. **November 30, 2012** (Friday). Agustin Roldan agustin1825@gmail.com
- 2013**
- YangQuan Chen. Detection, Identification and Compensation of Nonlinearities and An Experimental Verification Platform for Nonlinear Controllers. EECS SEMINAR @UCMerced, **Feb. 01, 2013**. 12:00-1:20PM @ COB 263
 - YangQuan Chen. "MESA LAB @/4 SJV". MESA LAB Robots and Ribs Symposium. **Feb. 9, 2013** Saturday. 25min.

- YangQuan Chen. The DRONE Age. Frontiers of Science and Engineering Lecture Series. Saturday Feb. 16th 2013, 10:00AM. Castle Air Museum, 5050 Santa Fe Dr. Atwater, CA.
 - YangQuan Chen. All Connected via Fractional Calculus: Power Law, Scale-Free, Heavy-Tailedness, Long Range Dependence, Long Memory, and Complexity due to Fractional Dynamics. February 25, 2013. Monday 3:00PM-4:30PM. MTS (Mind, Technology and Society) Seminar Series @ UC Merced COB 110
 - YangQuan Chen. "COROBOTS: HUMAN CENTRIC MESA". MESA LAB Robots and Ribs Symposium. Mar. 9, 2013 Saturday. 25min.
 - YangQuan Chen. "Mobile Sensor and Actuator Networks (MAS-net)". MESA LAB Robots and Ribs Symposium. April 20, 2013 Saturday. 25min.
 - Y.Q. Chen, Brandon Stark, A. Jenson, and C. Coopmans. *SUAS Airworthiness, Architecture, and Human Factors*. Invited Half-Day Tutorial at 2013 ICUAS, Atlanta, GA, (May 28, 2013)
 - Y.Q. Chen, Brandon Stark. "3D printed UAS and additive fault diagnosis and prognosis". May 28, 2013. ICUAS2013 Tutorial T2. Fault-tolerant Control and Cooperative Control of Unmanned Aerial Systems (UAS). Organized by Dr. Youmin Zhang.
 - YangQuan Chen. "When UAV meets Fractional Calculus". MESA LAB Robots and Ribs Symposium. June 1, 2013 Saturday. 25min.
 - YangQuan Chen. [More Optimal Image Processing by Fractional Order Differentiation and Fractional Order Partial Differential Equations](#). International Symposium on Fractional PDEs: Theory, Numerics and Applications. June 3 - 5, 2013. Salve Regina University, 100 Ochre Point Avenue, Newport RI 02840. (Single track symposium, 45 min.)
 - YangQuan Chen. "Connections, Optimal Random Search, More Optimal Image Processing, Cross-scale Dynamics". Fractional Fractional Calculus Day @ CSOIS Utah State University. June 10, 2013. 1:00-1:30 (30 min)
 - YangQuan Chen. "Mechatronics meets fractional calculus". Fractional Calculus Day @ UC Merced. June 12, 2013 (20 min) <http://mechatronics.ucmerced.edu/node/68>
 - YangQuan Chen. "ME280: Fractional Order Mechanics". Fractional Calculus Day @ UC Merced. June 12, 2013 (20 min) <http://mechatronics.ucmerced.edu/node/68>
 - YangQuan Chen. "UAS (drone) Legislation". MESA LAB Robots and Ribs Symposium. July 13, 2013 Saturday. 25min.
 - YangQuan Chen. Organizer. Full-day pre-conference workshop. "Introduction and Motivations. W6: Fractional Order Mechanics — An Introduction of An Emerging Research Field". ASME IDETC/CIE 2013, Portland, Oregon Convention Center. August 4, 2013.
 - YangQuan Chen. Organizer and Moderator. Panel Session. "Mechatronics meets fractional calculus - Introduction and Status Update". ASME IDETC/CIE 2013, Portland, Oregon Convention Center. August 5, 2013.
 - YangQuan Chen. "SJV=Ag Drone Valley". Regional Airport Authority Meeting Of The City Of Merced. August 20, 2013 Tuesday. 7PM. 30min.
 - YangQuan Chen. "On Research Excellence". MESA LAB Robots and Ribs Symposium. August 31, 2013 Saturday. 25min.
 - YangQuan Chen. "Drones for Farmers!" MESA LAB Robots and Ribs Symposium. (10/05/13)
 - YangQuan Chen. "Remote Sensing of Stress of Human and Plants". MESA LAB Robots and Ribs Symposium. (11/01/13)
 - YangQuan Chen. "UAV-Based Pest Management as a Cyber-Physical System: Part 1 and 2." Invited Lecture for Pest Management Professionals. UCANR Cooperative Extension Merced County (2 hours total) 11/5/13 and 11/12/13.
- 2014
- YangQuan Chen. "Fractional Order Modeling of Complex Relaxation Dynamics." 1/31/14. UC Merced BEST Graduate Program Invited Seminar Series.
 - YangQuan Chen. "Drones as CoEcologists for Water, Dust, Land to Peat Bogs". MESA LAB Robots and Ribs Symposium. (2/8/14)

- YangQuan Chen. “Robotic Environmental Co-Journalist for EJM”. MESA LAB Robots and Ribs Symposium. (4/4/14)
- YangQuan Chen. “The Era of Robotic Environmental Co-Journalists.” 4/30/14. Groundtruth and Airwaves: Sensor Networks and Emerging Technology for Environmental Journalism Symposium. CITRIS@UC Berkeley.
- YangQuan Chen. “Fractional order calculus and applications to heat transfer”. 5/5/14. Lam Research Invited Seminar.
- YangQuan Chen. “Optimal Stochastic Foraging: From Levy to Mittag-Leffler” 5/12/14. The First Foraging Workshop @ UC Merced. Organized by Anne S. Warlaumont.
- YangQuan Chen. “Fractional Calculus and Its Applications in Modeling and Signal Processing.” 5/23/14. Agilent Invited Seminar.
- YangQuan Chen. “Fractional Order Flight Control” MESA LAB Robots and Ribs Symposium. (7/11/14)
- YangQuan Chen. “Introduction to UC Merced’s Scientific Data Drone Research”. MESA LAB Robots and Ribs Symposium. (10/10/14) Teledyne visit.
- YangQuan Chen. “You and Your Research” – How to make your students “Publish and Flourish” 11/13/14. Publish and Flourish workshop @ FWDAF @ UC Merced invited speaker.
- YangQuan Chen. “Scientific Data Drone Research @ The MESA Lab of UC Merced” 12/1/2014. ENGR191 Professional Seminar.
- YangQuan Chen. “Scientific Data Drone Research at UC Merced”. 12/12/14. Beihang University, Beijing China. Invited Seminar.
- YangQuan Chen. “Fractional Calculus, Delay Dynamics and Networked Control Systems”. 12/12/14. Beihang University, Beijing China. Invited Seminar.
- YangQuan Chen. “Fractional Calculus for Better Understanding Extreme Phenomena.” 12/14/14. Guangdong University of Foreign Studies, China. Invited Seminar.
- YangQuan Chen. “Scientific Data Drone Research at UC Merced”. 12/18/14. Harbin Institute of Technology Shenzhen Graduate School, Shenzhen, China. Invited Seminar.
- YangQuan Chen. “Complexity as Prisma Spectrum of Fractional Order Dynamics in Nature and Man-made Systems: A New Perspective – from Inverse Power Law to Mittag-Leffler” 12/19/14. Fractional Calculus Day at South China University of Technology, Guangzhou, China.

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- YangQuan Chen. “Fractional Calculus for Better Understanding Extreme Phenomena.” 1/5/15. Northeastern University, Shenyang, China. Invited Seminar.
- YangQuan Chen. “Low Cost Scientific Data Drones for Enhanced Melon Productivity and Security” 1/8/15. San Diego, CA. California Melon Research Board Annual Symposium. Invited Talk.
- YangQuan Chen. “Scientific Data Drone Research @ The MESA Lab of UC Merced.” 1/22/15. FUEGO Symposium, LBNL.
- YangQuan Chen. “Scientific Data Drone Research @ The MESA Lab of UC Merced”. 2/18/15. UC ANR RECS Directors’ Meeting. Invited Presentation.
- YangQuan Chen. “Low Cost Scientific Data Drones: From Data to Decision to Action to Data.” 2/26/15. Yuma, AZ. Southwest Ag Summit (SWAG Summit). Invited Talk.
- YangQuan Chen. “*Fractional Order Data Analytics: connecting dots of Drones, Big Data, and Fractional Calculus*” MESA LAB Robots and Ribs Symposium. (3/21/15) AgriFlight visit.

Longer-term Visiting Scholars Hosted by me at CSOIS and at UC Merced since 2002 (83 total)

- France (6): Christophe Tricaud, Theodore Ndaza, Nicolas Monégier; Thomas SAQUER; Corentin Chéron; Youssef KOHEN
- Slovakia (4): Igor Podlubny, Tomas Skovranek, Martin Podlubny, Ivo Petras
- China (55): Tengyun Zhao; Zhian Wang; Dr. Jinping Ni; Dr. Shengyuan Xu; Dr. Xia Zhao; Dr. Wen Chen; Yan Li; Bin Wang; Ying Luo; Yongshun Jin, Sheng Hu, Wei Sun, Yingtao Zhang, Chunyang Wang,

Hongguang Sun, Xiaona Song, Dr. Changpin Li, Dr. Dingyu Xue; Yu Shang, Dr. Dali Chen, Jinlu Han, Jun Pan, Dr. Deshun Yin, Dingjin Huang, Yaojin Xu, Kexue Li, Hu Shuai, Zhuang Jiao; Chun Yin; Caibin Zeng; Bo Li, Peng Guo, Dr. Xuefeng Zhang, Dr. Kecai Cao, Dr. Aiming Ge, Dr. Zhanbing Bai, Taizhi Lyu, Dr. Jiaguo Liu, Yanan Qiu, Jianxiong Cao, Dr. GuiMei Zhang, Dr. Xiaodong Sun, Dr. Jiakai Huang, Dr. Zhigang Lian, Xiaobao Jia, Dr. Jianxin Liu, Dr. Liyan Qiao, Fudong Ge, Lu Liu, Dr. Jun Chu, Dr. Jianwu Dang, Jianhong Wang, Juan Chen, Dr. Cuihong Wang, Dr. Hua Chen,

- Germany (8): Fernando Buck; Florian Zwetti; Marc Baumann; Daniel Kaplanek; Norman Wildmann, Tobias Fromm, Johannes Kaplanek, Niloufar Irannejad
- Chile (1): Dr. Norelys Aguila Camacho
- Finland (1): Sakari Kettunen
- Spain (3): Ángel Rodríguez Castaño; Concha Monje; Inés Tejado Balsera
- Poland (1): Dariusz Ucinski;
- Sweden (2): Dr. Kenneth Holmstrom; Fredrik Hellman
- Iran (1): Sara Dadras
- Czech (1): Michal Podhradsky

Undergraduate Researchers Mentored:

- Currently, about 20 undergraduate students work in MESA LAB on various mechatronics and UAV projects.
- Over 70 in total including NSF REU site participants (2006-2011)
- All ECE seniors in Capstone Design courses (Senior Design) (2007-2010) benefitted from me as Senior Design Coordinator. Some were directly sponsored and financially supported by me.
- Mentor for 6 USU URCO (Undergraduate Research and Creative Opportunities) grant projects
- Christopher Hall, "Open Source Autonomous Micro Aerial Vehicle" 2007
- Mitchel Humpherys, "Vision-Based Autonomous Navigation of Unmanned Aerial Vehicles for Remote-Sensing Applications" 2008
- Johnathan Nielsen. "Real-time Alpha-numeric Target Recognition for Unmanned Aerial Vehicles" 2009
- Montgomery Joseph. "Automatic Pattern Discovery and Classification in UAV Surveillance" 2010
- Christopher Michael Coffin. "Prognostic Health Management System for Improving Airworthiness for Personal Remote Sensing UAVs" 2011
- Jarret Bone. "Endurance Optimization for Personal Remote Sensing Unmanned Aerial Vehicles" 2012

Undergraduate Honors Thesis

- Jake Erramouspe. "Autonomous Security Patrol System" 2010

Graduate Theses I Serve as the Major Advisor On-Going (transferred to UC Merced marked in color):

- 1 Ph.D. dissertation (Daniel Stuart, to complete in the end of 2015 at Utah State University)
- 4 Ph.D. students at UC Merced in Spring 2015
 - Mr. Brandon Stark, Mr. Zhuo Li, Mr Tiebiao Zhao (ME); Mr. Brendan Smith (ME); Mr. Duval Johnson (ME); Mr. Sina Dehghan (ME)
- MS student in Spring 2015
 - Mr. Marwin Ko (ME)

Graduate Theses I Served as the Major Advisor Completed at Utah State University:

(Total 28: 8 Ph.D. dissertations, 16 MS Plan-A theses, 4 MS Plan-B reports; * female graduate students)

1. 2005. Pengyu Chen. "Pattern Formation in Mobile Wireless Sensor Networks", Master of Science Thesis.
2. 2005. Zhongmin Wang. "Distributed Control of Distributed Parameter Systems Using Mobile Actuator and Sensor Networks", Master of Science Thesis.
3. 2005. Jinsong Liang. "Control of Linear Time-Invariant Disturbed Parameter Systems - From Integer Order To Fractional Order", Master of Science Thesis.

4. 2005. Yan Shi. "An Electrochemical Chip Prototype Using Square Wave Polarography Voltammetry and a Survey on Wireless Power Transmission", Master of Science Plan-B Report.
5. 2006. Hyo-Sung Ahn. "Robust and Adaptive Learning Control Design in the Iteration Domain" Ph.D. Dissertation.
6. 2006. Yashodhan Tarte. "Detection, Identification, and Compensation of Nonlinearities and an Experimental Verification Platform for Nonlinear Controllers", Master of Science Thesis.
7. 2006. Kenton Fife. "Vision-Based Road Detection and Tracking for an Autonomous Vehicle Platform", Master of Science Plan-B Report
8. 2007. Zhen Song. "Optimal Observation Problems Involving Wireless Sensor Networks" Ph.D. Dissertation.
9. 2007. William K. Bourgeois. "Engineering Swarms for Mobile Sensor Networks", Master of Science Thesis.
10. 2007. Rongtao Sun. "Fractional Order Signal Processing: Techniques and Applications", Master of Science Thesis.
11. 2007. Tripti Bhaskaran*. "Practical Tuning Method for Fractional Order Proportional and Integral Controllers", Master of Science Thesis.
12. 2008. Lizabeth Lee*. "Monitoring of indoor relative humidity levels in residential dwellings: a sensor network application." Master of Science Plan-B Report. <http://digitalcommons.usu.edu/etd/270>
13. 2008. Varsha Bhambhani*. "Optimal Fractional Order Proportional and Integral Controller for Processes with Random Time Delays." Master of Science Thesis. <http://digitalcommons.usu.edu/etd/246>
14. 2008. Shelley Rounds*. "Distributed Control for Robotic Swarms Using Centroidal Voronoi Tessellations," Master of Science Thesis. <http://digitalcommons.usu.edu/etd/218>
15. 2009. Austin Jensen. "gRAID: A Geospatial Real-Time Aerial Image Display For A Low-Cost Autonomous Multispectral Remote Sensing Platform (AggieAir)," Master of Science Thesis.
16. 2009. Han, Yiding, "An Autonomous Unmanned Aerial Vehicle-Based Imagery System Development and Remote Sensing Images Classification for Agricultural Applications" Master of Science, thesis. <http://digitalcommons.usu.edu/etd/513>
17. 2009. Shayok Mukhopadhyay. "Fractional Order Modeling & Control: Development of Analog Strategies for Plasma Position Control of the STOR-1M Tokamak." Master of Science Thesis. <http://digitalcommons.usu.edu/etd/460>
18. 2010. Adams, Joshua S., "Transmitter Localization Using Autonomous Robotic Swarms" (2010). Master of Science Thesis. <http://digitalcommons.usu.edu/etd/632>
19. 2010. Coopmans, Calvin, "Architecture, Inertial Navigation, and Payload Designs for Low-Cost Unmanned Aerial Vehicle-Based Personal Remote Sensing". Master of Science Thesis. <http://digitalcommons.usu.edu/etd/692>
20. 2010. Chao, Haiyang, "Cooperative Remote Sensing and Actuation Using Networked Unmanned Vehicles" Ph.D. Dissertation. <http://digitalcommons.usu.edu/etd/597>
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