Curriculum Vitae

Mingjun Wei

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Education:

Ph.D.	Theor. and Applied Mechanics	**Univ. of Illinois at Urbana-Champaign**	2004
M.S.	Mechanical Engineering	**Univ. of California, Los Angeles**	2001
M.Engr.	Modern Mechanics	**Univ. of Science and Technology of China**	1998
B.S.	Modern Mechanics	**Univ. of Science and Technology of China**	1996

PhD Thesis:

Jet Noise Control by Adjoint-Based Optimization (2004)
Thesis Advisor: Jonathan B. Freund, University of Illinois at Urbana-Champaign

Research Areas:

Computational Fluid Dynamics; Model Order Reduction; Control and Optimization; Fluid-Structure Interaction; Computational Aeroacoustics

Professional Experience:

2016 – present: Associate Professor (Harold O. and Jane C. Massey Neff Professorship), MNE Dept., Kansas State University

2015 – 2016: Associate Professor (MAE Academy Endowed Professorship), MAE Dept., New Mexico State University

2012 – 2015: Associate Professor, MAE Dept., New Mexico State University

2006 – 2012: Assistant Professor, MAE Dept., New Mexico State University

2006: Invited Researcher, 2nd European Forum on Flow Control, Poitiers, France, April–June, 2006

2005 – 2006: Postdoctoral Research Associate (Supervisor: Clarence W. Rowley), MAE Dept., Princeton University

Courses Taught:

KSU, ME571, “Fluid Mechanics”, undergraduate junior/senior level

KSU, ME720, “Intermediate Fluid Mechanics”, graduate level

KSU, ME820, “ Computational Fluid Dynamics”, graduate level

KSU, ME920, “ Spectral Method and Model Order Reduction”, graduate level

NMSU, ME338, “Fluid Mechanics”, undergraduate junior/senior level

NMSU, AE339, “Aerodynamics I”, undergraduate junior/senior level

NMSU, ME533, "Computational and Theoretical Fluid Mechanics", graduate level

NMSU, ME534, "Advanced Computational Fluid Dynamics", graduate level

Graduate Student Advising:

1. Haotian Gao, PhD (2018), *Thesis: "POD-Galerkin Based ROM for Fluid Flow with Moving Boundaries and the Model Adaptation in Parametric Space"*
2. Mehdi Tabandeh, PhD (2016), *Thesis: "Symmetrization in POD-Galerkin ROMs"*
3. Elnaz Rezaianzadeh, MS (2016), *Thesis: "Galerkin ROM Stability Assessment in Flows with Unsteady Shock Deformations"*
4. Min Xu, PhD (2014), *Thesis: "Understanding flapping-wing aerodynamics through adjoint-based approach"*
5. Tao Yang, PhD (2012), Postdoc (2012-2013), *Thesis: "Numerical study of flexible flapping wings"*
6. Bashar R. Qawasmeh, MS (2008), PhD (2012), *Thesis: "Extreme model reduction of shear layers"*
7. Lin Zhou, PhD (2012, Co-advising with Prof. Dejun Sun of USTC), *Thesis: "The stability and sound generation of compressible free shear layers"*
8. Jared D. Hooser, MS (2009), *Thesis: "A high-pressure driven compressible gas flow study inside a two-dimensional uniform microchannel"*
9. (current) Wei Zhang, PhD student (4th year, passed PhD Qualify exam)
10. (current) Kun Jia, PhD student (3rd year)
11. (current) Elnaz Rezaianzadeh, PhD student (2nd year)
12. (current) Bolun Xu, PhD Student (1st year)

Journal Publications:

1. T. Yang, **M. Wei**, K. Jia, J. Chen, "A monolithic algorithm for the flow simulation of flexible flapping wings", International Journal of Micro Air Vehicles (in press), 2019
2. M. Xu, **M. Wei**, C. Li, and H. Dong, "Adjoint-based optimization for thrust performance of three-dimensional pitching-rolling plate", *AIAA Journal* (appeared online in December), 2018
3. J. Tran, H. Gao, J. Sirohi, and **M. Wei**, "Reduced-order methodology for prediction of loads generated by a flexible flapping wing", *International Journal of Micro Air Vehicles*, Vol. 10, No. 1, pp. 31–41, 2018
4. M. Hassanalian, A. Abdelkefi, **M. Wei**, and S. Ziaei-Rad, "A novel methodology for wing sizing of bio-inspired flapping wing micro air vehicles: theory and prototype", *Acta Mechanica*, Vol. 228, Issue 3, pp 1097 – 1113, 2017
5. M. Xu, and **M. Wei**, "Using adjoint-based optimization to study kinematics and deformation of flapping wings", *Journal of Fluid Mechanics*, Vol. 799, pp. 56–99, 2016
6. M. Xu, **M. Wei**, T. Yang, and Y. S. Lee, "An embedded boundary approach for the simulation of a flexible flapping wing at different density ratio", *European Journal of Mechanics - B/Fluids* Vol. 55, pp. 146–156, 2016

7. M. Xu, **M. Wei**, C. Li, and H. Dong, "Adjoint-based optimization of flapping plates hinged with a trailing-edge flap", *Theoretical and Applied Mechanics Letters*, Vol. 5, pp. 1–4, 2015
8. B. R. Qawasmeh, and **M. Wei**, "Low-dimensional models for compressible temporally developing shear layers", *Journal of Fluid Mechanics*, Vol. 731, pp. 364–393, 2013
9. L. Zhou, **M. Wei**, and D. J. Sun, "A simple model for mechanism study of sound generation in mixing layers", *International Journal of Aeroacoustics*, Vol. 11, No. 3–4, pp. 447–458, 2012
10. L. Zhou, Z. Wan, D. Sun, and **M. Wei**, "The effects of initial perturbation to mixing-layer noise", *Theoretical and Applied Mechanics Letters*, Vol. 2, No. 032003, 2012
11. M. Schlegel, B. R. Noack, P. Jordan, A. Dillmann, E. Grschel, W. Schrder, **M. Wei**, J. B. Freund, O. Lehmann, and G. Tadmor, "On least-order flow representations for aerodynamics and aeroacoustics", *Journal of Fluid Mechanics*, Vol. 697, pp. 367–398, 2012
12. **M. Wei**, B. R. Qawasmeh, M. Barone, B. G. van Bloemen Waanders, and L. Zhou, "Low-dimensional model of spatial shear layers", *Physics of Fluids*, Vol. 24, No. 014108, 2012
13. A. V. G. Cavalieri, P. Jordan, Y. Gervais, **M. Wei**, and J. B. Freund, "Intermittent sound generation and its control in a free-shear flow", *Physics of Fluids*, Vol. 22, No. 115113, 2010
14. T. Yang, **M. Wei**, and H. Zhao, "Numerical study of flexible flapping wing propulsion", *AIAA Journal*, Vol. 48, No. 12, pp. 2909–2915, 2010
15. B. N. Shashikanth, A. Sheshmani, S. Kelly, and **M. Wei**, "Hamiltonian structure and dynamics of a neutrally buoyant rigid sphere interacting with thin vortex rings", *Journal of Mathematical Fluid Mechanics*, Vol. 12, pp. 335–353, 2010
16. **M. Wei**, and C. W. Rowley, "Low-dimensional models of a temporally evolving free shear layer", *Journal of Fluid Mechanics*, Vol. 618, pp. 113–134, 2009
17. C. Cai, K. R. Khasawneh, H. Liu, and **M. Wei**, "Collisionless gas flows over a cylindrical or a spherical object", *Journal of Spacecraft and Rockets*, Vol. 46, No. 6, Nov.-Dec., 2009
18. J. D. Hooser, **M. Wei**, B. E. Newton, and G. J. A. Chiffoleau, "An approach to understanding flow friction ignition: a computational fluid dynamics (CFD) study on temperature development of high-pressure oxygen flow inside micron-scale seal cracks", *Journal of ASTM International*, Vol. 6, No. 10, Nov. 2009
19. A. Samanta, J. B. Freund, **M. Wei**, and S. K. Lele, "Robustness of acoustic analogies for predicting mixing-layer noise", *AIAA Journal*, Vol 44, No. 11, pp. 2780–2786, 2006
20. **M. Wei**, and J. B. Freund, "A noise-controlled free shear flow", *Journal of Fluid Mechanics*, Vol. 546, pp. 123–152, 2006
21. X. Y. Yin, D. J. Sun, **M. J. Wei**, and J. Z. Wu, "Absolute and convective instability character of slender viscous vortices", *Physics of Fluids*, Vol. 12, No. 5, 2000
22. **M. Wei**, D. Sun, X. Yin, and J. Wu, "Stability analysis on supersonic trailing-line vortex", *Acta Mechanica Sinica*, Vol. 31, No. 6, 1999

Peer-Reviewed Conference Papers:

1. W. Zhang, and **M. Wei**, "Solving generalized eigenvalue problem: an alternative approach for dynamic mode decomposition", *AIAA* paper 2019-1897, San Diego, CA, 2019

2. H. Gao, **M. Wei**, and K. Jia, "Model adaptation of an Improved global POD-Galerkin model", *AIAA* paper 2019-1898, San Diego, CA, 2019
3. T. Scofield, K. Jia, **M. Wei**, and S. Bhattacharya, "Vorticity-transfer in a leading-edge-vortex due to controlled spanwise-bending", *AIAA* paper 2019-2161, San Diego, CA, 2019
4. E. Rezaian, and **M. Wei**, "Eigenvalue reassignment by particle swarm optimization toward stability and accuracy in nonlinear reduced-order models", *AIAA* paper 2018-3095, Atlanta, GA, 2018
5. H. Gao, **M. Wei**, and J. Hrynuk, "Data-driven ROM for the prediction of dynamic stall", *AIAA* paper 2018-3094, Atlanta, GA, 2018
6. P. Zhang, P. Wu, Q. Zhang, Z. Shi, **M. Wei**, M. Jaberi-Douraki, "Optimization of feed thickness on distribution of airflow velocity in belt dryer using computational fluid dynamics velocity in belt dryer using computational fluid dynamics", *Energy Procedia*, 142 (2017) 1595–1602, Cardiff, UK, 2017
7. P. Zhang, Y. Mu, Z. Shi, Q. Zhang, **M. Wei**, M. Jaberi-Douraki, "Computational fluid dynamic analysis of airflow in belt dryer: effects of conveyor position on airflow distribution", *Energy Procedia*, 142 (2017) 1367–1374, Cardiff, UK, 2017
8. M. Xu, Y. Tao, and **M Wei**, "Implementation of Immersed Boundary Method in WENO Scheme to Simulate Shock-Structure Interaction", *FEDSM2017-69217*, ASME 2017 Fluids Engineering Division Summer Meeting, Waikoloa, HI, 2017
9. W. Zhang, and **M. Wei**, "Model order reduction using DMD modes and adjoint DMD modes", *AIAA* paper 2017-3482, Denver, CO, 2017
10. E. Rezaian, and **M. Wei**, "Obtaining a stable Galerkin ROM in presence of shock-vortex interactions", *AIAA* paper 2017-1008, Grapevine, TX, 2017
11. H. Gao, and **M. Wei**, "Domain decomposition in POD-Galerkin projection for flows with moving boundary", *AIAA* paper 2016-1102, San Diego, CA, 2016
12. M. Tabandeh, **M. Wei**, and J. P. Collins, "On the symmetrization in POD-Galerkin model for linearized compressible flows", *AIAA* paper 2016-1106, San Diego, CA, 2016
13. M. Hassanalian, A. Abdelkefi, **M. Wei**, and S. Ziaei-Rad, "Theoretical analysis and experimental verification for sizing of flapping wing micro air vehicles", *AIAA* paper 2016-1746, San Diego, CA, 2016
14. J. Tran, J. Sirohi, H. Gao, and **M. Wei**, "Reduced order modeling of loads and deformation of a flexible flapping wing", *AIAA* paper 2015-0177, Kissimmee, FL, 2015
15. M. Xu, and **M. Wei**, "A continuous adjoint-based approach for the optimization of wing flapping", *AIAA* paper 2014-2048, Atlanta, GA, 2014
16. H. Gao, and **M. Wei**, "Global model reduction for flows with moving boundary", *AIAA* paper 2014-0222, National Harbor, MD, 2014
17. M. Xu, and **M. Wei**, "Using adjoint-based approach to study flapping wings", *AIAA* paper 2013-0839, Grapevine, TX, 2013
18. M. Xu, **M. Wei**, T. Yang, J. C. Riddick, and A. J. Hall, "Numerical investigation for optimal sensor placement on flapping-wing MAVs", *AIAA* paper 2013-0360, Grapevine, TX, 2013

19. T. Yang, and **M. Wei**, "A fully-coupled approach to simulate three-dimensional flexible flapping wings", *AIAA* paper 2013-0864, Grapevine, TX, 2013
20. L. Zhou, Z. Wan, D. Sun, and **M. Wei**, "Sound generation by different vortex interactions in mixing layers", *AIAA* paper 2012-1173, Nashville, TN, 2012
21. M. Xu, **M. Wei**, T. Yang, Y. S. Lee, and T. D. Burton, "Nonlinear structural response in flexible flapping wings with different density ratio", *AIAA* paper 2011-376, Orlando, FL, 2011
22. **M. Wei**, and T. Yang, "A global approach for reduced-order models of flapping flexible wings", *AIAA* paper 2010-5085, Chicago, IL, 2010
23. A. V. G. Cavalieri, P. Jordan, Y. Gervais, **M. Wei**, and J. B. Freund, "Intermittent sound generation in a free-shear flow", *AIAA* paper 2010-3963, Stockholm, 2010
24. T. Yang, **M. Wei**, and H. Zhao, "Numerical study of flexible flapping wing propulsion", *AIAA* paper 2010-553, Orlando, FL, 2010
25. Z. Liang, H. Dong, H. Wan, P. Beran, and **M. Wei**, Wing-wake interaction and its proper orthogonal decomposition, *AIAA* paper 2010-5084, Chicago, IL, 2010
26. Z. Liang, H. Dong, and **M. Wei**, "Computational analysis of hovering hummingbird flight", *AIAA* paper 2010–555, Orlando, FL, 2010
27. K. Khasawneh, C. Cai, **M. Wei**, and Yang, S., "Rarefied jet plume flows", *AIAA* Paper 2010-0986, Orlando, FL, 2010
28. C. Cai, K. Khasawneh, H. Liu, and **M. Wei**, "Collisionless gas flows over a cylinder and sphere", *AIAA* paper 2009-3603, 41st AIAA Thermophysics Conference, San Antonio, 22-25 June, 2009
29. **M. Wei**, B. R. Qawasmeh, M. Barone, and B. G. van Bloemen Waanders, "Low-dimensional modeling for spatially developing free shear layers", AIAA paper 2009–363, Orlando, FL, 2009
30. B. N. Shashikanth, A. Sheshmani, S. Kelly, and **M. Wei**, "Hamiltonian structure and dynamics of a neutrally buoyant rigid sphere interacting with thin vortex rings", ITP-07-26, Proceedings of ITP-07, 2007 Interdisciplinary Transport Phenomena V, Bansko, Bulgaria, October, 2007
31. **M. Wei**, and P. Jordan, "An optimally defined sound source in mixing layers", *AIAA* paper 2007-3869, Miami, FL, 2007
32. D. Eschricht, P. Jordan, **M. Wei**, J. Freund, and F. Thiele, "Analysis of noise-controlled shear-layers", *AIAA* paper 2007-3660, Rome, Italy, 2007
33. S. Ahuja, C. W. Rowley, I. G. Kevrekidis, **M. Wei**, T. Colonius, and G. Tadmor, "Low-dimensional models for control of leading-edge vortices: equilibria and linearized models", *AIAA* paper 2007-709, Reno, NV, 2007
34. **M. Wei**, and C. W. Rowley, "Low-dimensional models of a temporally evolving free shear layer", *AIAA* paper 2006-3228, San Francisco, CA, 2006
35. J. Freund, A. Samanta, **M. Wei**, and S. Lele, "The robustness of acoustic analogies", *AIAA* paper 2005-2940, Monterey, CA, 2005
36. J. B. Freund, and **M. Wei**, "Some small changes that make a mixing layer very quiet", *AIAA* paper 2005-0997, Reno, NV, 2005
37. J. B. Freund, and **M. Wei**, "An emperical 'lower bound' on free-shear-flow noise", *XXI ICTAM*, Warsaw, Poland, 2004

38. J. B. Freund, and **M. Wei**, "Adjoint-based control of free shear flow noise", *AIAA* paper 2003-3570, Orlando, FL, 2003
39. **M. Wei**, and J. B. Freund, "Noise control using adjoint-based optimization", *AIAA* paper 2002-2524, Breckenridge, CO, 2002
40. **M. Wei**, and J. B. Freund, "Optimal control of free shear flow noise", *AIAA* paper 2002-0665, Reno, NV, 2002
41. X. Y. Yin, D. J. Sun, **M. J. Wei**, and J. Z. Wu, "Absolute/convective instability of incompressible and compressible swirling vortex", *AIAA* paper 99-0140, Reno, NV, 1999

Other Conference Presentations:

1. E. Rezaian, and **M. Wei**, "On the Robustness of POD-Galerkin ROMs with Symmetrizable Governing Equations", *the 71st APS-DFD annual meeting*, Atlanta, GA, 2018
2. **M. Wei**, "Different Base Functions and Other Concerns about ROM" (oral only) for invited session "Modal Analysis of Fluid Flows", AIAA Aviation 2018, Atlanta, GA, 2018
3. H. Gao, and **M. Wei**, "Model Adaptation in Parametric Space for POD-Galerkin Models", *the 70th APS-DFD annual meeting*, Denver, CO, 2017
4. E. Rezaian, and **M. Wei**, "Stabilization Approaches for Linear and Nonlinear Reduced Order Models", *the 70th APS-DFD annual meeting*, Denver, CO, 2017
5. K. Jia, **M. Wei**, M. Xu, C. Li, and H. Dong, "An Adjoint-Based Approach to Study a Flexible Flapping Wing in Pitching-Rolling Motion", *the 70th APS-DFD annual meeting*, Denver, CO, 2017
6. **M. Wei**, "Exploring Nature's Flying Mechanism in a Dual Space" (invited special session: Research Frontiers in Bio-Inspired Propulsion I), *AIAA Aviation 2017*, Denver, CO, 2017
7. H. Gao, and **M. Wei**, "Model order reduction for fluid dynamics with moving solid boundary", *the 69th APS-DFD annual meeting*, Portland, OR, 2016
8. W. Zhang, and **M. Wei**, "A low-order Galerkin model based on DMD and adjoint-DMD modes", *the 69th APS-DFD annual meeting*, Portland, OR, 2016
9. **M. Wei**, and M. Xu, "Adjoint-based optimization for the understanding of the aerodynamics of a flapping plate", *the 68th APS-DFD annual meeting*, Boston, MA, 2015
10. **M. Wei**, M. Xu, and H. Dong, "Using adjoint-based optimization to study wing flexibility in flapping flight", *the 67th APS-DFD annual meeting*, San Francisco, CA, 2014
11. M. Xu, T. Yang, and **M. Wei**, "Implementation of immersed boundary method in WENO scheme to simulate blast-structure interaction", *the 67th APS-DFD annual meeting*, San Francisco, CA, 2014
12. H. Gao, and **M. Wei**, "Global model reduction for the aerodynamics of coupled fluid-structure systems", *the 67th APS-DFD annual meeting*, San Francisco, CA, 2014
13. M. Xu, and **M. Wei**, "Using adjoint-based approach to understand flapping-wing aerodynamics", *the 66th APS-DFD annual meeting*, Pittsburgh, PA, 2013
14. H. Gao, and **M. Wei**, "Model order reduction for the coupled system of flow and moving structure", *the 66th APS-DFD annual meeting*, Pittsburgh, PA, 2013

15. **M. Wei**, and M. Xu, "An adjoint-based approach for the understanding of flapping wings", in mini-symposium "Stochastic Analysis, Control and Computation of Fluid Dynamics and other Physical Phenomena" (invited), *SIAM* Annual Meeting, San Diego, CA, July, 2013
16. **M. Wei**, M. Xu, and T. Yang, "Global model reduction for fluid-structure system", *the 65th APS-DFD annual meeting*, San Diego, CA, 2012
17. M. Xu, and **M. Wei**, "Adjoint-based optimization for flapping wings", *the 65th APS-DFD annual meeting*, San Diego, CA, 2012
18. T. Yang, and **M. Wei**, "Effects of wing flexibility on aerodynamic performance in hovering flight", *the 65th APS-DFD annual meeting*, San Diego, CA, 2012
19. **M. Wei**, "A computational framework for adjoint-based study of flapping wings", *the 64th APS-DFD annual meeting*, Baltimore, MD, 2011
20. T. Yang, L. Martin-Alarcon, **M. Wei**, and F. Shu, "Numerical simulation of a plunging flexible hydrofoil and its experimental validation", *the 64th APS-DFD annual meeting*, Baltimore, MD, 2011
21. L. Martin-Alarcon, T. Yang, F. Shu, and **M. Wei**, "Experimental study of flow field around a plunging flexible hydrofoil", *the 64th APS-DFD annual meeting*, Baltimore, MD, 2011
22. M. Xu, and **M. Wei**, "Fluid-Structure Interaction for Flapping Flexible Wings with Large Mass Ratio", *the 64th APS-DFD annual meeting*, Baltimore, MD, 2011
23. L. Zhou, **M. Wei**, and D. Sun, "A simple sound source for temporally-developing mixing layers", *the 64th APS-DFD annual meeting*, Baltimore, MD, 2011
24. **M. Wei**, "Reduced-order modeling for fully-coupled fluid and structural dynamics of flexible flapping wings", in mini-symposium "Advances in Control of Fluid Dynamics and Challenges facing the US Defense Department's thrust on Unmanned Autonomous Systems" (invited), *SIAM* Conference on Control & Its Applications, Baltimore, MD, July, 2011
25. M. Xu, **M. Wei**, T. Yang, Y. Lee, and T. D. Burton, "Effects of mass ratio to flexible flapping-wing propulsion", *the 63rd APS-DFD annual meeting*, Long Beach, CA, 2010
26. T. Yang, and **M. Wei**, "A fully-coupled approach to simulate three-dimensional flexible flapping wings", *the 63rd APS-DFD annual meeting*, Long Beach, CA, 2010
27. B. R. Qawasmeh, and **M. Wei**, "A least order model for temporally-developing compressible shear layers", *the 63rd APS-DFD annual meeting*, Long Beach, CA, 2010
28. **M. Wei**, and T. Yang, "Global model reduction for fluid-structure interaction in flapping flexible wings", *the 62nd APS-DFD annual meeting*, Minneapolis, MN, 2009
29. B. R. Qawasmeh, and **M. Wei**, "Low-dimensional modeling of shear layers", SIAM conference on Applications of Dynamical Systems, Snowbird, UT, May, 2009
30. **M. Wei**, T. Yang, and H. Zhao, "A strong-coupling approach to simulate flexible flapping wing", *the 61st APS-DFD annual meeting*, San Antonio, TX, 2008
31. B. R. Qawasmeh, and **M. Wei**, "Projection of spatial shear layers in a symmetry-reduced space", *the 61st APS-DFD annual meeting*, San Antonio, TX, 2008
32. **M. Wei**, and C. W. Rowley, "Low-dimensional modeling for both temporally and spatially developing free shear layers", *the 60th APS-DFD annual meeting*, Salt Lake City, Utah, 2007

33. **M. Wei**, and C. W. Rowley, "Low-dimensional models of a temporally evolving free shear layer using template-based methods", *the 59th APS-DFD annual meeting*, Tampa Bay, FL, 2006
34. **M. Wei**, and J. B. Freund, "Jet noise mechanism studied by optimal control", *the 56th APS-DFD annual meeting*, East Rutherford, NJ, 2003
35. **M. Wei**, and J. B. Freund, "Adjoint-based control and analysis of free-shear flow noise", *14th US National Congress of Theoretical and Applied Mechanics*, Blacksburg, VA, 2002
36. **M. Wei**, and J. B. Freund, "Adjoint-based control of noise from two-dimensional mixing layer", *the 54th APS-DFD annual meeting*, San Diego, 2001.

Invited Talks:

1. **M. Wei**, "Short Courses for Reduced-Order Modeling: ROM101 and ROM901", invited short courses at U.S. Army Research Laboratory, Aberdeen, MD, Jul., 2018
2. **M. Wei**, "Different Base Functions and Other Concerns about ROM" (invited special session), AIAA Aviation 2018, Atlanta, GA, Jun., 2018
3. **M. Wei**, "Adjoint-based optimization: from jet noise control to flapping-wing aerodynamics", invited talk at the University of Kansas, Apr., 2018
4. **M. Wei**, "Exploring Nature's Flying Mechanism in a Dual Space" (invited special session), AIAA Aviation 2017, Denver, CO, Jun., 2017
5. **M. Wei**, invited seminar talk in Math Department at NMSU, Oct., 2015
6. **M. Wei**, invited talk at Zhejiang University, June, 2015
7. **M. Wei**, "Model order reduction: from high-fidelity simulation to reduced-order models", invited talk at Iowa State University, Oct. 2014
8. **M. Wei**, "Using adjoint-based method for the understanding and optimization in flexible flapping wings", invited talk at University of Science and Technology of China, May, 2014
9. **M. Wei**, "Using adjoint-based method for the understanding and optimization in flexible flapping wings", invited talk at Shanghai University, May, 2014
10. **M. Wei**, "To understand flapping-wing aerodynamics through adjoint-based optimization", invited talk at University of Minnesota – Twin Cities, Sept., 2013
11. **M. Wei**, "Numerical simulation and optimization of flapping wings", invited talk at Arizona State University, Feb., 2013
12. **M. Wei**, and M. Xu, "An adjoint-based approach for the understanding of flapping wings", mini-symposium (invited), *SIAM* Annual Meeting, San Diego, CA, July, 2013
13. **M. Wei**, "Flexible flapping wings: simulation, optimization, and model reduction", invited talk at University of Texas at Austin, Oct., 2012
14. **M. Wei**, "Global model reduction for fluid-structure systems", invited talk at U.S. Army Research Laboratory, Aberdeen, Aug., 2012
15. **M. Wei**, "Numerical simulation for optimization in flapping-wing MAVs", invited talk at U.S. Army Research Laboratory, Aberdeen, Nov., 2011
16. **M. Wei**, "Simulation and optimization for flexible wings", invited talk at Wright Patterson Air Force Base, AFRL/RB, July, 2011

17. **M. Wei**, "A fully-coupled approach to simulate flapping flexible wings", invited talk at U.S. Army Research Laboratory, Aberdeen, July, 2011
18. **M. Wei**, "Reduced-order modeling for fully-coupled fluid and structural dynamics of flexible flapping wings", mini-symposium (invited), *SIAM* Control and Its Applications, Baltimore, MD, 2011
19. **M. Wei**, "To fly like a bird", invited talk at Mesilla Valley Audubon Society, Las Cruces, NM, Feb., 2011
20. **M. Wei**, "Modeling and control in fluid dynamics and aeroacoustics", invited talk at University of Science and Technology of China, Dec., 2009
21. B. R. Qawasmeh, and **M. Wei**, "Low-dimensional modeling of shear layers", mini-symposium (invited), *SIAM* conference on Applications of Dynamical Systems, Snowbird, UT, May, 2009
22. **M. Wei**, "Low-dimensional modeling for temporally developing free shear layers", invited talk at Computer Science Research Institute (CSRI) of Sandia National Laboratories, Albuquerque, NM, Oct., 2007

Funded Projects (total funding: $3,276,708; actual funding/credit for MW: $1,997,359):

1. "A Collaborative Development of Experimental Separated Flow Data for Reduced Order Modeling (ROM) and Applications of ROM to Jet Fuel Spray Atomization", Army Research Lab Faculty Fellowship, 2018 (MW: $14,600)
2. "Reduced-Order Model and Shaped Sensor for Flapping-Wing Control" (PI), Army Research Lab (ARL) – Micro Autonomous Systems and Technology (MAST) CTA, 2015 – 2017 (total: $360,000; MW: $214,000)
3. "HPC-Enabled Parametric Studies of Under Body Blasts: From High-Fidelity to Reduced-Order Models" (PI), Army Research Lab (ARL) – Army High Performance Computing Research Center (AHPCRC), 2012 – 2017 (MW: $625,000)
4. "Physics-Based Morphology Analysis and Adjoint Optimization of Flexible Flapping Wings" (NMSU-PI), AFOSR, 2012 – 2016 (total: $320k; MW: $159,837)
5. "Comprehensive Reduced-Order Modeling and Validation for Loads and Flight Stability of a Flapping Wing" (PI), Army Research Lab (ARL) – Micro Autonomous Systems and Technology (MAST) CTA, 2013 – 2015 (total: $570,000; MW: $285,000)
6. "Global Model Order Reduction for Fluid-Structure Interaction" (PI), Graduate Research Enhancement Grant (GREG), NMSU-VPR (internal support), 2013 – 2016 (MW: $44,000)
7. "Acquisition of an Integrated System for Laser-Assisted Non-Intrusive Experimentation and Data-Driven Reduced-Order Modeling" (Co-PI), DoD Research and Education Program for HBCU/MI Equipment/Instrumentation, 2014 – 2015 (total: $493,567; MW: $164,522)
8. "Flapping and Twisting Aeroelastic Wings for Propulsion" (PI), Army Research Lab (ARL) – Army High Performance Computing Research Center (AHPCRC), 2007 – 2012 (total: $759,141; MW: about $400k)
9. "Simulation and Modeling of Flexible Flapping Wings" (PI), AFRL/RB Summer R&D Program, 2011 (MW: $10,400)
10. "Effects to Reduced-Order Modeling of Shear Layers: Boundary Conditions, Compressibility, and External Forcing" (PI), Sandia National Laboratories, 2008 – 2009 (MW: $40,000)

11. "Reduced-Order Modeling of Shear Layers" (PI), Sandia National Laboratories, 2007 – 2008 (MW: $40,000)

Awards and Honors:

Associate Fellow of American Institute of Aeronautics and Astronautics (AIAA)
Harold O. and Jane C. Massey Neff Professorship (KSU), 2016 –
MAE Academy Endowed Professorship (NMSU), 2015 – 2016
NMSU Millionaire Researcher Award, 2014

Professional Membership and Committee:

American Institute of Aeronautics and Astronautics (AIAA) Associate Fellow
American Physical Society (APS) member
American Society of Mechanical Engineers (ASME) member
American Physical Society (APS) DFD Acrivos Award Committee (2017 – 2018)
AIAA Fluid Dynamics Technical Committee member (2013 – 2016)
AIAA Aeroacoustics Technical Committee member (2007 – 2011)

Internal Serivces:

MNE Department Honors and Awards Committee chair, KSU, 2018 –
Faculty Search Committee member, KSU, 2018, 2019
MNE Department Graduate Program Committee member, KSU, 2017 – 2018
Frankenhoff Research Committee (College of Engineering), KSU, 2017 –
Faculty Search Committee member, KSU, 2017
University Research Council (URC) member (NMSU, 2013 – 2016)
MAE Department Graduate Program director (NMSU, 2013 – 2016)
Departmental Graduate Committee member, NMSU, (2008 – 2016), chair (2013 – 2016)
Sigma Gamma Tau faculty advisor, (NMSU, 2013 – 2015)
AE Faculty Search Committee member (NMSU, 2014)
MAE DH Search Committee member (NMSU, 2012)
AE Faculty Search Committee member (NMSU, 2010)

Professional Services:

- Editorial service:
  1. International Journal of Micro Air Vehicles, Associate Editor
- Conference organizer and session chairs:
  1. session chair, *AIAA Aviation 2018*, Atlanta, GA, 2018
  2. session chair, *the 70th APS-DFD annual meeting*, Denver, CO, 2017
  3. session chair, *AIAA Aviation 2017*, Denver, CO, 2017
  4. session chair, *AIAA SciTech 2016*, San Diego, CA, 2016
  5. session chair, *the 68th APS-DFD annual meeting*, Boston, MA, 2015
  6. associate organizer, *AIAA SciTech 2015*, Kissimmee, FL, 2015
  7. session chair, *52nd AIAA Aerospace Sciences Meeting*, National Harbor, MD, 2014
  8. session chair, *51st AIAA Aerospace Sciences Meeting*, Grapevine, TX, 2013

9. session chair, *the 65th APS-DFD annual meeting*, San Diego, CA, 2012
10. session chair, *49th AIAA Aerospace Sciences Meeting*, Orlando, 2011
11. session chair, *2011 AIAA Southwest Regional Technology Symposium*, Las Cruces, NM
12. session chair, *2010 AIAA Southwest Regional Technology Symposium*, Las Cruces, NM
13. session chair, *2009 AIAA Southwest Regional Technology Symposium*, Las Cruces, NM
14. session chair, *the 61st APS-DFD annual meeting*, San Antonio, TX, 2008
15. session chair, *46th AIAA Aerospace Sciences meeting and Exhibit*, Reno, 2008

- Paper referee:
  1. Journal of Fluid Mechanics
  2. Physics of Fluids
  3. Physical Review Fluids
  4. Physical Review Letters
  5. Journal of Computational Physics
  6. Journal of Fluid and Structure
  7. Journal of the Royal Society Interface
  8. Proceedings of The Royal Society A
  9. Computers and Fluids
  10. AIAA Journal
  11. International Journal for Numerical Methods in Engineering
  12. International Journal of Computational Fluid Dynamics
  13. Journal of Aerospace Engineering
  14. Aeronautical Journal
  15. Aerospace Science and Technology
  16. Chinese Physics Letters
  17. Papers for various academic conferences (*AIAA, ASME*).
- Proposal review:
  1. National Science Foundation (NSF)
  2. Army Research Office (ARO)
  3. Department of Energy (DoE), Office of Science
  4. Research Grants Council, Hong Kong
  5. Shota Rustaveli National Science Foundation