Curriculum Vitae — Geng Chen

Department of Mathematics,
University of Kansas,
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Education:

BS, Applied Mathematics, Ocean University of China, Jul., 2002.

MS, Applied Mathematics, Fudan University, Jul., 2005, Advisor: Daqian Li (Tatsien Li).

Ph.D, Mathematics, University of Massachusetts, Amherst, Sep., 2010, Advisor: Robin Young.

Employment Experience:

Associate Professor, University of Kansas, Aug. 2020 - now

Assistant Professor, University of Kansas, Aug. 2016 - Aug. 2020

Hale postdoc, Georgia Institute of Technology, Aug. 2013 - 2016.

Research associate, Pennsylvania State University, Sep. 2010 - Aug. 2013.

Research Interests:

I have broad interests on analysis, partial differential equations, fluid dynamics, mathematical physics and mathematical modeling. Currently, my research focuses on the following topics.

- Hyperbolic conservation laws, Compressible Euler and Navier-Stokes equations;
- Gas dynamics, Water waves, Nematic liquid crystals.
- Nonlinear wave equations;
- Optimal mass transport.

RESEARCH: GRANTS; PUBLICATIONS; PRESENTATIONS

Grants and Honors:

External grants

- NSF DMS-2306258, Stability, Uniqueness, and Existence for Solutions of Hyperbolic Conservation Laws and Nonlinear Wave Equations, Solo PI, 2023-2026, $234,974.
- NSF DMS-2008504, Large solutions for systems of hyperbolic conservation laws and wave equations in one and multiple space dimensions, Solo PI, 2020-2024, $264,998.
- NSF DMS-1715012, System of hyperbolic conservation laws and nonlinear wave equations, Solo PI, 2017-2021, $145,000.

- American Institute of Mathematics (AIM), SQuaRE program, Investigations of the Euler and Relativistic Euler Systems. With Christopher Alexander, Manas Bhatnagar, Blake Temple, Yannan Shen and Robin Young, up to three workshops from 2024 at AIM.
- Simons Collaboration Grants for Mathematicians, 2017-2022, $40,000, recommended for grant, but withdrawn due to conflict with NSF grant.
- AMS Simons Travel Grant, $4,000, 2014–2016. Mentor: Alberto Bressan in Penn State University.

Internal grant

- Big XII fellowship, $2,500, 2019-2020, for two visits to University of Texas, Austin.
- New Faculty General Research Fund, $8,000, 2017-2019, University of Kansas.
- General Research Fund, $3,000, 2022, University of Kansas.

Honor

- Morrison Foundation Teaching Award, University of Kansas, 2022
- Distinguish Thesis Award, University of Massachusetts, Amherst, 2011.

Publications

A: Submitted and preprints

47. Geng Chen Moon-Jin Kang and Alexis F. Vasseur, From Navier-Stokes to BV solutions of the barotropic Euler equations, available at arXiv:2401.09305 (118 pages).
46. Geng Chen and Yanni Zeng, BV solutions to a hyperbolic system of balance laws with logistic growth, submitted, available at arXiv:2309.03129.
45. Geng Chen, Tao Huang, Xiang Xu, Singularity formation for full Ericksen-Leslie system of nematic liquid crystal flows in dimension two, submitted, available at arXiv:2305.03904.
44. Hong Cai, Geng Chen and Yannan Shen, A Finsler type Lipschitz optimal transport metric for a wave system modeling nematic liquid crystals, submitted, available at arXiv:2304.11535.

B: Published and to appear

43. Albeto Bressan, Geng Chen, Shoujun Huang, Generic Singularities for 2D Pressureless Flow, to appear in *Science China Mathematics*, available at arXiv:2307.11602.
42. Geng Chen, Yanbo Hu and Qingtian Zhang, Initial-boundary value problems for Poiseuille flow of nematic liquid crystal via full Ericksen-Leslie model, to appear in *SIAM Math. Anal.*, available at arXiv:2305.15046.
41. Geng Chen, Weishi Liu and Majed Sofiani, The Poiseuille flow of the full Ericksen-Leslie model for nematic liquid crystals: The general Case, to appear in *J. of Differential Equations*.
40. Hong Cai, Geng Chen and Yannan Shen, A Finsler type Lipschitz optimal transport metric for a quasilinear wave equation, *J. Differential Equations* 356 (2023), 289–335.
39. Geng Chen, Shihui Zhu and Yannan Shen, Existence and regularity for global solutions including breaking waves from Camassa-Holm and Novikov equations to lambda-family equations, to appear in, Quarterly of Applied Mathematics.

38. Geng Chen, Sam G. Krupa and Alexis F. Vasseur, Uniqueness and weak-BV stability for 2x2 conservation laws, *Arch. Ration. Mech. Anal.*, 246 (2022), no. 1, 299–332.
37. Geng Chen, Majed Sofiani, Singularity formation for the general Poiseuille flow of nematic liquid crystals, *Commun. Appl. Math. Comput.* 5 (2023), no. 3, 1130–1147. (by invitation)
36. Hong Cai, Geng Chen and Tian-Yi Wang, Singularity formation for radially symmetric expanding wave of Compressible Euler Equations, *SIAM J. Math. Anal.*, 55 (2023), no. 4, 2917–2947.
35. Hong Cai, Geng Chen, Yi Du and Yannan Shen, Uniqueness of conservative solutions to a one-dimensional general quasilinear wave equation through variational principle, *J. Math. Phys.*, 63 (2022), no. 2, Paper No. 021508, 21 pp.
34. Geng Chen, Gui-Qiang Chen and Shengguo Zhu, Vanishing Viscosity Limit of the Three-Dimensional Barotropic Compressible Navier-Stokes Equations with Degenerate Viscosities and Far-Field Vacuum, *Ann. Inst. H. Poincare C Anal. Non Lineaire*, 39 (2022), no. 1, 121-170.
33. Geng Chen, Gui-Qiang Chen and Shengguo Zhu, Formation of singularities and existence of global continuous solution for the compressible Euler equations, *SIAM J. Math. Anal.*, 53 (2021) volume 6, 6280–6325.
32. Hong Cai, Geng Chen and Hongwei Mei, Uniqueness of Dissipative Solution for Camassa-Holm Equation with Peakon-Antipeakon Initial Data, *Applied Mathematics Letters*, Volume 120, 2021, 107268.
31. Geng Chen, Tao Huang, and Weishi Liu, Poiseuille flow of nematic liquid crystals via the full Ericksen-Leslie model, *Arch. Ration. Mech. Anal.*, 236 (2020), 839-891.
30. Geng Chen, Optimal time-dependent density lower bound for nonisentropic gas dynamics, *J. Differential Equations*, 268 (2020), no. 7, 4017-4028.
29. Geng Chen, Ronghua Pan, and Shengguo Zhu, Lower bound of density for Lipschitz continuous solutions in the isentropic gas dynamic, *Discrete Contin. Dyn. Syst., Series A*, 39 (2019), no. 7, 4259-4277.
28. Yi Du, Geng Chen, Jianli Liu, The almost global existence for a 3-D wave equation of nematic liquid-crystals, 53–64, Contemp. Math., 725, Amer. Math. Soc., Providence, RI, 2019. (conference proceeding by invitation).
27. Alberto Bressan, Geng Chen, Qingtian Zhang, On finite time BV blow-up for the p-system, *Comm. Partial Differential Equations.* 43 (2018), no. 8, 1242–1280.
26. Geng Chen, Robin Ming Chen and Yue liu, On the global well-posedness of conservative weak solutions for the integrable Novikov equation, *Indiana Univ. Math. J.*, 67 (2018), 2393-2433.
25. Hong Cai, Geng Chen, Robin Ming Chen and Yannan Shen, Lipschitz metric for the Novikov equation, Arch. Ration. Mech. Anal. 229 (2018), no. 3, 1091-1137.
24. Hong Cai. Geng Chen, Yi Du, Uniqueness and regularity of conservative solution to a wave system modeling nematic liquid crystal, J. Math. Pures Appl. (9) 117 (2018), 185-220..
23. Hong Cai, Geng Chen, Yannan Shen and Zhong Tan, Generic regularity and Lipschitz metric for the Hunter-Saxton type equations, *J. Differential Equations*, 262 (2017), 1023-1063.
22. Hong Cai, Geng Chen and Yannan Shen, Lipschitz Metric for conservative solutions of the two–component Camassa–Holm system, *Z. Angew. Math. Phys. (ZAMP)*, 68 (2017), no. 1, 12 pp.
21. Alberto Bressan and Geng Chen, Lipschitz metric for a class of nonlinear wave equations, *Arch. Ration. Mech. Anal.*, 226 (2017), no. 3, 1303-1343.

20. Geng Chen, Ronghua Pan and Shengguo Zhu, Singularity formation for compressible Euler equations, *SIAM J. Math. Anal.*, 49 (2017), no. 4, 2591-2614.
19. Alberto Bressan and Geng Chen, Generic structure of conservative solutions to a nonlinear wave equation, *Ann. Inst. H. Poincare Anal. Non Lineaire*, 34 (2017), no. 2, 335-354.
18. Geng Chen, Optimal time-dependent lower bound on density for classical solutions of 1-D compressible Euler equations, *Indiana Univ. Math. J.*, 66 (2017), no. 3, 725-740.

- **The rest papers are before KU**

17. Alberto Bressan, Geng Chen, Qingtian Zhang and Shengguo Zhu, No BV bounds for approximate solutions to the p-system with general pressure law, *J. Hyper. Differential Equations*, 12 (2015), 799-816.
16. Alberto Bressan, Geng Chen and Qingtian Zhang, Unique Conservative Solutions to a Variational Wave Equation, *Arch. Ration. Mech. Anal.*, 217 (2015), no. 3, 1069-1101.
15. Geng Chen, Tao Huang and Chun Liu, Finite time singularities for hyperbolic systems, *SIAM J. Math. Anal.*, 47 (2015), no. 1, 758-785.
14. Geng Chen and Yannan Shen, Existence and regularity of solutions for nonlinear wave equations, *Discrete Contin. Dyn. Syst., Series A*, 35 (2015), no. 8, 3327-3342.
13. Geng Chen and Robin Young, Shock-free solutions of the compressible Euler equation, *Arch. Ration. Mech. Anal.*, 217 (2015), no. 3, 1265-1293.
12. Alberto Bressan, Geng Chen and Qingtian Zhang, Lack of BV bounds for approximate solutions to the p-system with Large Data, *J. Differential Equations* 256 (2014), 3067-3085.
11. Alberto Bressan, Geng Chen and Qingtian Zhang, Uniqueness of conservative solutions to the Camassa-Holm Equation via characteristics, *Discrete Contin. Dyn. Syst., Series A*, 35 (2015), no. 1, 25-42.
10. Geng Chen and Helge Kristian Jenssen, No TVD fields for 1-D isentropic gas flow, *Comm. Partial Differential Equations* 38 (2013), no. 4, 629-657.
9. Geng Chen and Yuxi Zheng, Singularity and existence for a wave system of nematic liquid crystals, *J. Math. Anal. Appl.*, 398 (2013), 170-188.
8. Geng Chen, Robin Young and Qingtian Zhang, Shock formation in the compressible Euler equations and related systems, *J. Hyper. Differential Equations*, 10 (2013), no. 1, 149-172.
7. Geng Chen, Ping Zhang and Yuxi Zheng, Energy conservative solutions to a nonlinear wave system of nematic liquid crystals, *Comm. Pure Appl. Anal.*,, 12 (2013), no. 3, 1445-1468.
6. Geng Chen, Erik Endres and Helge Kristian Jenssen, Pairwise wave interactions in ideal polytropic gases, *Arch. Ration. Mech. Anal.*, 204 (2012), no. 3, 787-836.
5. Geng Chen and Robin Young, The vacuum in nonisentropic gas dynamics, *Acta Math. Sci. Ser. B Engl. Ed.*, 32 (2012), no. 1, 339-351. (invited paper for a special issue for Professor Constantine M. Dafermos' 70's birthday)
4. Geng Chen and Robin Young, Smooth solutions and singularity formation for the inhomogeneous nonlinear wave equation., *J. Differential Equations*, 252 (2012), no. 3, 2580-2595.
3. Geng Chen, Formation of singularity and smooth wave propagation for the non-isentropic compressible Euler equations, *J. Hyper. Differential Equations*, 8 (2011), no. 4, 671-690.
2. Geng Chen, Disease persistence for a kind of age-structured epidemic models, *Appl. Math. J. Chinese Univ. Ser. A*, 22 (2007), no. 3, 253-262.

1. Geng Chen and Yuanjun Wang, SARS epidemic model and its application, *Appl. Math. J. Chinese Univ. Ser. A*, 21 (2006), no. 3, 253-263.

Scholarly Presentations (after entering KU)

- Feb 6, 2024, PDE seminar, Georgia Tech, Atlanta,
  Vanishing viscosity limit from Navier-Stokes to BV solution of Euler equations.
- Aug 15, 2023, ICIAM, Canada.
  L^2 theory for compressible Euler equations and vanishing viscosity limit from Navier-Stokes equations.
- July 26, 2023, Invited speaker, Recent Progress on Mathematical Fluid Dynamics, Jeju Island, Korea.
  Large solutions of compressible Euler equations.
- Jun 30, 2023, Invited speaker, Shocking Developments: New Directions in Compressible and Incompressible Flows, Max Planck Institute for Mathematics in the Sciences, Leipzig,
  L^2 theory for compressible Euler equations and vanishing viscosity limit from Navier-Stokes equations
- Dec 2, 2022, Colloquium, University of Alabama, Birmingham,
  Uniqueness and L^2 stability of BV solution for compressible Euler equations.
- Nov 4-6, 2022, 5th Annual Meeting of the SIAM Texas-Louisiana Section, Houston,
  Regularity and Lipschitz optimal transport metric for scalar integrable systems with cusp singularity
- Oct 5, 2022, Analysis Seminar, University of Texas, Austin.
  Poiseuille flow of nematic liquid crystals via Ericksen-Leslie model.
- Sep 14, 2022, Applied Mathematics and Computation Seminar, University of Massachusetts, Amherst.
  Uniqueness and L^2 stability of BV solution for compressible Euler equations.
- Aug 29, 2022, CAM colloquium, Penn State,
  Uniqueness and L^2 stability of BV solution for compressible Euler equations.
- Mar 30-Apr 1, 2022, 12th Annual IMACS conference, University of Georgia.
  Uniqueness of BV solution for compressible Euelr equations.
- Mar 26-28, 2022, AMS sectional meeting, Purdue University,
  Singularity and existence for Poiseuille flow of nematic liquid crystals via the full Ericksen-Leslie model.
- Dec 8, 2021, CAM seminar, KU
  Uniqueness of BV solution for compressible Euelr equations.
- Nov 2021, PDE seminar, Shanghai University, China
  Uniqueness and L2 stability for hyperbolic conservation laws and Euler equations
- Jun, 2021, PDE seminar, Huazhong University of Science and Technology, China
  Poiseuille flow of nematic liquid crystals via Ericksen-Leslie model.
- Nov 11, 2020, Nonlinear Analysis/Differential Equations seminar, North Carolina State University,
  Poiseuille flow of nematic liquid crystals via Ericksen-Leslie model.
- Sep 23, 2020, PDE seminar, Shanghai University, Shanghai, China,
  Recent Progress on large solutions of compressible Euler equations.
- Jul 09, 2020, PDE seminar, Minzu University of China, Beijing, China,
  Recent Progress on large solutions of compressible Euler equations.
- Feb 7, 2020, PDE Seminar, Vanderbilt University,

Singularity formation and Large BV existence for compressible Euler equations.

- Feb 5 2020, CAM Seminar, KU,
  Poiseuille flow of nematic liquid crystals via the full Ericksen-Leslie model.

- Dec 11, 2019, SIAM Conference on Analysis of Partial Differential Equations (PD19),
  Large solutions for compressible Euler equations.
- Nov 2, 2019, AMS special session, Gainesville, FL.,
  Poiseuille flow of nematic liquid crystals via the full Ericksen-Leslie model
- Sep. 25, 2019, University of Texas, Austin,
  Lipschitz metric for the variational wave equation.
- Sep. 23, 2019, Mathematics Colloquium, Wayne State University,
  Large solutions for compressible Euler equations.
- Aug 23, 2019, special session, International Conference on Applied Mathematics, Modeling and Computational Science (AMMCS),
  Poiseuille flow of nematic liquid crystals via the full Ericksen-Leslie model
- May 10, 2019, PDE seminar, University of California, Los Angeles.
  Poiseuille flow of nematic liquid crystals via the full Ericksen-Leslie model
- May 6, 2019, PDE Forum Modeling and Analysis (workshop), University of Pittsburgh
  Poiseuille flow of nematic liquid crystals via the full Ericksen-Leslie model
- March 29, 2019, PDE seminar, University of South Carolina.
  Poiseuille flow of nematic liquid crystals via Ericksen-Leslie model.

- Oct 7, 2018, SIAM Louisiana-Texas Section Conference, Baton Rouge, Louisiana, special section: Nonlinear conservation laws and applications.
  BV existence or blowup for p-system?
- Aug 2-3, 2018, Mini-workshop, Jinan University, Guangzhou, China.
  Topics on variational wave equations.
- Jul 11, 2018, Colloquium, Fudan University, Shanghai, China.
  New progress on the large bv existence of p-system.
- June 25, 2018, XVII International Conference on Hyperbolic Problems Theory, Numerics, Applications, Penn State University,
  A wave model for nematic liquid crystals.
- Jun 13, 2018, SIAM Conference on Nonlinear Waves and Coherent Structures, minisymposium: Boundaries, Fronts, and Interfaces in Biological and Physical Applications.
  Wave Model for Nematic Liquid Crystal.
- Mar 16, 2018, PDE seminar, Tulane University, LA.
  Large Solutions of Compressible Euler Equations.
- Feb 22, 2018, PDE Seminar, University of Missouri, MO.
  Lipschitz metric for a nonlinear wave equation.

- Dec 18, 2017, Seminar, New York University at Shanghai, China.
  Lipschitz metric for a nonlinear wave equation.

- Dec 19, 2017, PDE seminar, Fudan University, Shanghai, China.
  Lipschitz metric for a nonlinear wave equation.
- Dec 27, 2017, PDE Model and Nonlinear Waves for Fluids and Plasma Workshop, Tsinghua Sanya International Mathematics Forum (TSIMF), Sanya, China.
  Lipschitz metric for a nonlinear wave equation.
- Nov 11, 2017, PDE seminar, University of California, Davis.
  Recent progress on the large BV existence of p-system
- Sep 13, 2017, Analysis Seminar, University of Kansas.
  Global well-posedness for some integrable systems with cusp singularity.
- Sep 9, 2017, AMS sectional meeting, Special Session on Nonlocal PDEs in Fluid Dynamics, Denton, TX.
  Recent progress on 1-d compressible Euler equations.
- Mar 17, 2017, Workshop on Nonlinear Waves: Analysis and Applications, University of Pittsburgh, PA.
  Recent progress for large BV existence of p-system,
- Mar 8, 2017, CAM Seminar, University of Kansas, Lawrence, KS.
  Global well-posedness for scalar integrable systems with cusp singularity.
- Jan 7, 2017, AMS Special Session on PDE Analysis on Fluid Flows, Joint Mathematics Meetings, Atlanta, GA.
  Global well-posedness for nonlinear wave equations with applications in nematic liquid crystals.

- Oct 11, 2016, Colloquium, University of California, Long Beach, CA.
  Lipschitz metric for a nonlinear wave equation.
- Sep 21, 2016, CAM Seminar, University of Kansas, Lawrence, KS.
  Large solutions of compressible Euler equations.

SERVICE: COMMITTEES; EDITORS; REFEREES; ORGANIZATION OF WORKSHOPS AND CONFERENCES.

Committees in the Department of Mathematics:

- Director of Graduate Admission, 2020-Present.
- Executive committee, 2023 spring-2024
- Member of Graduate committee, 2020-Present.
- Member of Chair Search committee, 2021-Present.
- Member, Evaluation of Teaching and GTA Training: Teaching Awards, 2018-2020.
- Chair, Kansas Collegiate Math Competition, 2018-2021.
- Chair/Co-Chair, Colloquium Committee, 2016-2020.
- Member, Library Committee, 2016-Present.

Other service in the Department of Mathematics:

- Organizing Sneek Peak Event, Nov. 2020 (20+ participants, online), Nov 2021 (20+ participants, online), Nov 2022, 2023 (10+ participants, in person).
- Organizing meeting for perspective students with offer, March 2022, 2023, 2024 in person.
- Co-Organizer, Mathematics Distinguished Lecture Series, (For Constantine Dafermos), 2017-2018.

- Coach, Putnam Exam Competition, Kansas Collegiate Math Competition, 2017-now.
- Panelist, Academic Misconduct Hearing, Fall 2016.
- Write, Grade and Proctor the qualify exam for analysis, every semester, Fall 2018-now.

Committee and panel out of the department:

- Grant review panelist, for National Science Foundation, three times.
- External reviewer for proposal, Research Grants Council (RGC) of Hong Kong, 2020, 2021.

Organization of Colloquium and Seminars (local):

- Mathematics Distinguished Lecture Series, Professor Constantine Dafermos, Brown University, April 12, 2018.
- Colloquium, Department of Mathematics, University of Kansas, 2016-now.
- PDE seminar, School of Mathematics, Georgia Institute of Technology, 2013 – 2015.
- Working seminar in PDE, School of Mathematics, Georgia Institute of Technology, Fall 2013.

Organization of conference (national):

- Co-organizer on Workshop on Nonlinear Differential Equations, Dynamical Systems and Applications, Oct 20-21, 2018 (with Weishi Liu).

Organization of Special section or Minisymposium for Conferences (national and international):

- Special Session on "System of Hyperbolic Conservation Laws and Applications." at IMACS, at University of Georgia, Mar 30-Apr 1, 2022 (with Yanni Zeng).
- Special session on "Conservation laws and nonlinear wave equations" at the AMS Fall Eastern Sectional Meeting, virtual conference formerly to be held at Pennsylvania State University, State College, PA, October 3-4, 2020 (Saturday - Sunday) Meeting #1160 (with Alberto Bressan and Qingtian Zhang).
- Special session at the AMS Sectional meeting (March 2020, Tufts University). (with Siran Li and Kun Zhao) Canceled due to Covid.
- SIAM conference (PD19) co-organizer of Minisymposium on Nonlocal PDEs in Fluid Dynamics, La Quinta, CA, Dec 11-14, 2019 (with Changhui Tan).
- Special Session, conference on Applied Mathematics, Modeling and Computational Science (AMMCS-2019), Waterloo, Canada, August 18-23, 2019. (with Alberto Bressan)
- SIAM conference (PD19) co-organizer of Minisymposium on Nonlocal PDEs in Fluid Dynamics, La Quinta, CA, Dec 11-14, 2019 (with Changhui Tan)
- SIAM conference (PD17), co-organizer of Minisymposium on Nonlinear PDEs in Fluid Mechanics, Baltimore, MD, Dec. 9-12, 2017 (with Cheng Yu and Xiaoqian Xu).
- Joint Mathematics Meetings, co-organizer of Special Session on *PDE Analysis on Fluid Flows*, Atlanta, GA, Jan. 4-7, 2017. (with Ronghua Pan and Xiang Xu)

- AMS Fall Western Sectional meeting, co-organizer of Special Session on Conservation Laws, Nonlinear Waves and Applications, University of California, Riverside, Riverside, CA Nov. 4-5, 2017 (with Tien Khai Nguyen and Qingtian Zhang).
- AMS Spring Southeastern Sectional meeting, co-organizer of special session on *PDE Analysis in Fluid Flows*, University of Georgia, Athens, GA, March 5-6, 2016. (with Ronghua Pan and Yao Yao)
- AMS Spring Southeastern Section Meeting, co-organizer of special session on *Recent Development on Hyperbolic Conservation Laws*, University of Tennessee, Knoxville, TN, March 21–23, 2014. (with Ronghua Pan and Weizhe Zhang)

Editor on a conference proceeding:

- The AMS Contemporary Mathematics book series is publishing a volume based on two special sessions "Spectral Calculus and Quasilinear Partial Differential Equations" and "PDE Analysis on Fluid Flows" held at the joint meetings at Atlanta, January 4-7. The serving editors are Marius Beceanu, Jerry Bona, Avy Soffer, Shijun Zheng, Geng Chen and Tuoc V. Phan.

Referee on Peer-reviewed journals after entering KU: More than 10 papers every year. Here is a selected list of journals: Inventiones, Memoirs of the AMS, Journal of Differential Equations, SIAM Journal of Mathematical Analysis, Communications in Mathematical Sciences, Nonlinear Analysis: Real World Application, Discrete and Continuous Dynamical Systems, etc.

Teaching: Advising; Classroom teaching (2019-now)

Undergraduate Advising:

- Honor B.S degree thesis adviser:
  Spencer Dang, Fall 2017- Spring 2020. Spencer's research project, under my direction, was awarded a Undergraduate Research Award (UGRA), by the Center of Understand graduate Research. Spencer is now a Ph.D student in Penn State.
- Coach on Putnam exam.

Graduate and Postdoc Advising:

- Adviser: Doctoral
  Xiang Xu, 6-th year Ph.D student. advisor. One paper ready for submission.
  Majed Sofiani, 7-th year Ph.D student. Co-adviser (with Weishi Liu). Two paper published, including one on Journal of Differential Equations. Another single author paper is published on JMAA.
  Faris El-Katri,c2-st year Ph.D student. advisor.
- Adviser: Master,
  Lucas Schauer, graduated, Spring 2019. Lucas is now a Ph.D student in Colorado School of Mines.
- Graduate Committee member: Doctoral
  Many.
- No postdoc.

Classroom teaching

- University of Kansas

  Fall 2024, Math 766, Analysis II.

  Spring 2023, Math 960, Functional analysis.

  Fall 2022, Sabbatical leave.

  Spring 2022, Math 951, PDE II.

  Fall 2021, Math 810, Measure Theorem.

  Fall 2020, Math 220, Differential Equations.

  Spring 2020, Math 220, Differential Equations.

  Fall 2019, Math 646, Complex analysis, Math 810, Real Analysis.

  Spring 2019, Math 766, Analysis II (graduate course).

  Fall 2018, Math 850, Differential equations and dynamic systems (graduate course).

  Spring 2018, Math 951, Advanced PDE II (graduate course); Math 220, Differential Equations.

  Fall 2017, Reading course for Ph.D student.

  Spring 2017, Math 647, Applied Partial Differential equations, Math 291, Honor Linear Algebra.

  Fall 2016, Math 220, Differential Equation.

Other activity: Seminar for graduate students (local)

- Presentation on Math Club, to KU Graduate Students, Nov. 10, 2020.