J. Keith Nisbett

Associate Professor of Mechanical Engineering

Missouri University of Science and Technology
Mechanical and Aerospace Engineering
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Research Interests

Kinematics, Mechanical Design, Mechanism Synthesis

Education

Ph.D. in Mechanical Engineering at the University of Texas at Arlington (1988)
M.S. in Mechanical Engineering at the University of Texas at Arlington (1986)
B.S. in Mechanical Engineering at the University of Texas at Arlington (1984)

Professional Experience

Missouri University of Science and Technology (Formerly University of Missouri–Rolla)

Assoc. Chair of Mechanical Engineering	Aug. 1998 – Dec. 2021
Interim Chair of Mechanical and Aerospace Engineering	July 2019 – Dec. 2020
Associate Professor of Mechanical Engineering	Aug. 1995 – present
Assistant Professor of Mechanical Engineering	Jan. 1989 – July 1995

Nisbett Machine Shop, Coppell, Texas

Apprentice machinist	1980 – 1983

Professional Affiliations

American Society of Mechanical Engineers, UMR Faculty Advisor, Sept. 1989 - Aug. 2001
Gubernatorial appointee to Amusement Ride Safety Board, 2002 – 2018, chair 2003 – 2015

Selected Awards

2022, 2016 S&T Faculty Teaching Award
2019-2020 S&T College of Engineering and Computing Dean's Educator
2011 S&T Faculty Service Award
2022, 2008, 2004, 2003, 2002, 2001, 2000, 1998, 1993, 1992 S&T Outstanding Teaching Award
2007 UMR Outstanding Advisor, Freshmen Engineering
2005 Academy of Mechanical and Aerospace Engineers Faculty Excellence Award
2002 Governor's Award for Teaching Excellence
2000 – 2001 UM Faculty Performance Shares Award, for efforts in recruiting and retention
2000 Academy of Mechanical Engineers Faculty Excellence Award for Teaching
1996 – 1997 Outstanding Faculty Advisor Award, MSM–UMR Alumni Association

Selected Institutional and Professional Service

S&T Campus

- S&T Equity Resolution Hearing Panelist 2022 – present
- S&T Grievance Oversight Committee, 2016 – 2021
- S&T Remmers Distinguished Performer/Lecturer Committee, 2012 – present
- S&T Commencement Committee, 1994 – 2019, chair 2014 – 2017
- S&T Curricula Committee, 1997 – 2012; chair 2000 – 2010
- Faculty Senate Secretary, 2011 – 2012
- Academic Council/Faculty Senate, MAE representative, 2007 – 2011
- Rules, Procedures, and Agenda (RP&A) Committee, 2005 – 2012
- Engineering Discipline Specific Curriculum Committee, 2008 – 2011
- Student Design & Experiential Learning Center Board of Directors, 2009 – 2012
- S&T Assessment Committee, 2010 – 2011
- School of Engineering Curricula Committee, 1999 – 2007
- School of Engineering Assessment Committee, 1998 – 2007
- UMR Strategic Enrollment Management Committee, 2000 – 2002

MAE Department

- Associate Chair of Mechanical Engineering, 1998 – 2021
- MAE Curriculum Committee, chair, 1998 – present
- MAE Scholastic Action Committee, chair 1998 – 2021
- MAE Teaching Mentoring Team, 2014 – present
- MAE Scholarship Committee, 1998 – present
- MAE Assessment Oversight Committee, 2000 – present

Advising

- Human Powered Vehicle Design Team Advisor, 1998 – 1999, 2007 – 2012
- Freshman Engineering Advisor, 1996 – 2015
- PRO Advisor, 1998 – 2015
- American Society of Mechanical Engineers, Student Section Advisor, 1989 – 2001

Youth Outreach

- Jackling Intro to Engineering High School Summer Program, ME Coordinator, 1994 – 2012, 2018
- S&T Robotics Summer Camp, 2005 – 2014
- First Lego League Rolla Regional Robotics Team Advisor, 2001 – 2021
- Botball Robotics Team Advisor, 2005 – 2019
- Boy Scout Merit Badge Counselor in Robotics, 2012 – 2013

Professional Service

- Missouri Amusement Ride Safety Board, 2002 – 2018, chair 2003 – 2015

Selected Publications and Presentations

Budynas, R.G., Nisbett, J. K., Shigley's Mechanical Engineering Design, 11th edition, McGraw-Hill, 2019.

Nisbett, J. K., PowerPoint Lecture Slides for Shigley's Mechanical Engineering Design, 11th ed., McGraw-Hill Education, New York, NY, 2019.

Nisbett, J. K., Budynas, R. G., Solutions Manual for Shigley's Mechanical Engineering Design, 11th ed., McGraw-Hill Education, New York, NY, 2019.

Budynas, R.G., Nisbett, J. K., Shigley's Mechanical Engineering Design, 10th edition, McGraw-Hill, 2015.

Nisbett, J. K., PowerPoint Lecture Slides for Shigley's Mechanical Engineering Design, 10th ed., McGraw-Hill Education, New York, NY, 2015.

Budynas, R. G., and Nisbett, J. K., Solutions Manual for Shigley's Mechanical Engineering Design, 10th ed., McGraw-Hill Education, New York, NY, 2015.

Nisbett, J. K., "A Low-Stakes Basic Principles Exam to Assess Student Outcomes and Provide Direct Feedback to the Curriculum," invited presentation, 2013 ABET Symposium, Portland, OR, April 13, 2013.

Budynas, R.G., Nisbett, J. K., Shigley's Mechanical Engineering Design, 9th edition, McGraw-Hill, 2011.

Budynas, R.G., Nisbett, J. K., Shigley's Mechanical Engineering Design, 8th edition, McGraw-Hill, 2008.

Kahler, C.A., Nisbett, J. K., and Goodin Jr., C. R., "A Computer Implementation of the Position Solution of Planar Linkages Using Vector Loop Decomposition," DETC98/MECH-5921, Proceedings of the 1998 ASME Design Engineering Technical Conferences, Atlanta, GA, September 13-16, 1998.

Watkins, D., and Nisbett, J. K., "A Closed Form Method for Backtracking from a Modified Burmester Curve to a Set of Precision Positions," *Proceedings of the 1996 ASME Design Engineering Technical Conferences,* Irvine, California, August 18-22, 1996.

Adams, W. T., Lawley, T. J., and Nisbett, J. K., "Solving the Planar Motion Generation Problem by the Gradient Method," *Proceedings of the 1995 Applied Mechanisms and Robotics Conference,* Vol. 2, AMR-067, Cincinnati, Ohio, Dec. 1995.

Nisbett, J. K., Barker, C. R., "A Kinematically Intelligent Blackboard Environment with a Unique Sketch Method," *Proceedings of the 1993 Applied Mechanisms and Robotics Conference*, Cincinnati, Ohio, Nov. 1993. Also *Journal of Applied Mechanisms and Robotics*, Vol. 3, 1996.

Nisbett, J. K., and Lawley, T. J., "The Geometric Generation of the Joint Loci of Spatial Dyads with Axis Joints," *Proceedings of ASME Mechanisms Conference*, DE-Vol. 47, pp. 543 - 548, Phoenix, AZ, Sept. 1992. Also *Journal of Applied Mechanisms and Robotics*, Vol. 2, 1995.