

CURRICULUM VITAE

NAME

Mitchell J. Stansloski

ADDRESS

XXXXXXXXXXXX
Fort Collins, CO 80524

PHONE

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EDUCATION

2010 Ph.D., Mechanical Engineering, Colorado State University, Fort Collins, CO

1996 M.S, Mechanical Engineering, Mississippi State University, Mississippi State, MS

1988 B.S., Mechanical Engineering, Ohio Northern University, Ada, OH

CERTIFICATIONS

Professional Engineering License, State of Colorado, #33804, July, 1999

ISO 18436-2 Category IV Vibration Analyst, August, 2003

PROFESSIONAL POSITIONS

| | |
|---------------------------|---|
| March 2000 – Present | Founder and CEO, Red Wolf Reliability (Pioneer Engineering), Fort Collins, CO Company of consulting engineers providing reliability engineering services, educational seminars, complex engineering analysis solutions, and research and development projects. Primary industries serviced include oil & gas, power generation, and chemical production. |
| August 2017 – Present | Founder and CEO, Voyager Instrument Company, Fort Collins, CO Company dedicated to assembling, selling, and installing proprietary products developed by Red Wolf Reliability. |
| July 1997 – March 2000 | Reliability Services Manager, Entek IRD International, Milford, OH Managed an international team of field service engineers and instructors. Provided vibration analysis and predictive maintenance consulting services and instruction. |
| October 1996 – July 1997 | Owner/Operator, MS Engineering, Longmont, CO Provided consulting services in the field of vibration analysis and predictive maintenance. Sold the business to Entek IRD International. |
| June 1995 – October 1996 | Instructor and Analyst, Entek IRD International, Milford, OH Taught numerous public and private vibration analysis seminars. Provided consulting services to solve complex machinery problems. |
| March 1993 – June 1995 | Plant Engineer, Chemdal Corporation, Aberdeen, MS Managed all plant engineering and maintenance. Ensured successful startup of expansion from 10K tons to 70K tons per year. Reduced maintenance costs 50% within two years. Established similar programs at sister plant in Birkenhead, England. |
| April 1992 – March 1993 | Field Service Engineer, IRD Mechanalysis, Columbus, OH Consulted with clients to establish vibration analysis programs. |
| October 1990 – April 1992 | Maintenance Engineer, AP Technoglass, Bellefontaine, OH Created and established predictive maintenance program using vibration analysis. Performed design modifications in support of production. |

May 1988 – October 1990 Maintenance Engineer, Savannah River Plant, Aiken, SC
Created and established predictive maintenance program using vibration analysis.
Performed design modifications in support of production.

ACADEMIC POSITIONS

January 2023 – Present Professor of Practice, Department of Mechanical Engineering, Colorado State University, Fort Collins, CO

January 2020 – May 2020 Adjunct Professor, Department of Mechanical Engineering, Colorado State University, Fort Collins, CO

August 2014 – May 2016 Professor of Practice, Department of Mechanical Engineering, Colorado State University, Fort Collins, CO

August 2011 – July 2014 Instructor, Department of Mechanical Engineering, Colorado State University, Fort Collins, CO

January 2011 – July 2011 Adjunct Professor, Department of Mechanical Engineering, Colorado State University, Fort Collins, CO

US Patents

Strain Based System and Method for Detection of Failure of Fluid Film Bearings
Patent Allowed, Patent Number 9841329

Strain Based Systems and Methods for Performance Measurement and/or Malfunction Detection of Rotating Machinery
Patent Allowed, Patent Number 10684193

HONORS AND AWARDS

2023 Mechanical Engineering Departmental Nominee for the TILT Instructional Innovation in Service Learning Award

2016 Engineering College Council *Best Professor* Award

2015 Engineering College Council *Best Professor* Award

2015 Mechanical Engineering Departmental Nominee for the Board of Governors *Excellence in Undergraduate Teaching* Award

2014 *Exceptional Mentoring Award*, Jack and June Richardson Scholar Honors Thesis Mentor for Forrest Craft

1986 – 1988 *Captain*, Varsity Swimming, Ohio Northern University

PUBLISHED WORKS

Books:

1. Stansloski, M.J., (2022). *Vibration Analysis for Rotating Equipment*, Red Wolf Reliability, Inc., Fort Collins, CO. ISBN 9798447146023

Refereed Journal Articles

1. Stansloski, M.J., (2008). Analysis and Redesign Report for Overhung Fan, *Journal of Failure Analysis and Prevention*, 8: pp103-110.
2. [2 citations] Kim C. Long , William S Duff , John W Labadie , Mitchell J Stansloski , Walajabad S Sampath , Edwin K.P. Chong , (2015) "Multi-objective fatigue life optimization using Tabu Genetic Algorithms", *International Journal of Structural Integrity*, Vol. 6 Iss: 6, pp.677 – 68

3. [59 citations] Drake A, Donahue T, Stansloski M, Donahue S, (2016) “Horn and horn core trabecular bone of bighorn sheep rams absorbs impact energy and reduces brain cavity accelerations during high impact ramming of the skull”, *Acta biomaterialia*, Vol 44, 10.1016.

Non-Refereed Journal Articles/Chapters/Proceedings/Transactions

1. Stansloski, M.J., (2007). Redesign of Overhung Fan Using Vibration and Finite Element Analysis, *Proceedings of the 61st Meeting of the Society for Machinery Failure Prevention Technology*, pp 261-277.
2. Stansloski, M.J., (1997). Detecting Electrical Faults Using Spike Energy Spectrum, *Maintenance Technology*, February, 1997.

Other (e.g. lab texts, book reviews, technical reports, in-house reports):

1. Stansloski, M.J., (2010). Application of Force Prediction to Rotating Equipment Using Pseudo Inverse Techniques, *Dissertation Submitted for Completion of PhD*, Colorado State University, Fort Collins, CO, May, 2010.
2. [1 citation] Stansloski, M.J., (1996). Detecting and Correcting Resonance in Sheet Aluminum Winder Using Vibration Signature and Finite Element Analysis, *Thesis Submitted for Completion of Masters Degree*, Mississippi State University, Mississippi State, MS, May 1996.

PAPERS PRESENTED/SYMPOSIA/INVITED LECTURES/PROFESSIONAL MEETINGS/WORKSHOPS

1. Stansloski, M.J. (2019) Engineering Panel for Pi Tau Sigma National Conference, Hosted by Colorado State University, Fort Collins, CO, February, 2019.
2. Stansloski, M.J., (2018) Journal Bearing Malfunction Analysis Using Vibration and Dynamic Strain Data, *Society for Maintenance and Reliability Professionals National Conference*, Orlando, FL, October, 2018.
3. Stansloski, M.J., Torres, V., (2018) Using Reliability Block Diagrams for Reliability Improvement, *Society for Maintenance and Reliability Professionals National Conference*, Orlando, FL, October, 2018.
4. Stansloski, M.J., (2015). Reliability Improvement: Bridging the Gap Between Analytics and Strategy, *Reliability 2.0 Conference*, Las Vegas, NV, April 15, 2015.
5. Stansloski, M.J., (2014). Reducing Carbon Footprint with Reliability Improvement, *Colorado Chapter of the Society of Manufacturing Engineers*, Westminster, CO, October, 2014.
6. Stansloski, M.J., (2013). Leadership in Engineering, *2013 NAESC Western Regional Conference*, Fort Collins, CO, October, 2013.
7. Stansloski, M.J., (2012). Monitoring Centrifugal Pump Performance Using Vibration Analysis, *Advanced Facilities Management and Engineering Conference*, Centennial, CO, October, 2012.
8. Stansloski, M.J., (2010). Detecting Lubrication Faults Using Vibration Analysis, *Reliable Plant Conference*, Nashville, TN, September, 2010.
9. Stansloski, M.J., (2010). Effective Defect Analysis – Maximizing Your Vibration Data Collection, *Reliability Web Webinar*, August, 2010.
10. Stansloski, M.J., (2010). Applying Disruptive Learning Techniques in a Manufacturing Environment, *MARTS Conference*, Chicago, IL, April, 2010.

11. Stansloski, M.J., (2009). Applying Modal Analysis Techniques, *Annual Corporate MillerCoors Maintenance Conference*, Golden, CO, September, 2009.
12. Stansloski, M.J., (2004). Gear Vibration Analysis on Lift Drives, *Rocky Mountain Lift Association Conference*, Grand Junction, CO, May, 2004.
13. Stansloski, M.J., (2004). Gear Vibration Analysis, *Colorado Chapter of the Vibration Institute Meeting*, Denver, CO, May, 2004.
14. Stansloski, M.J., (2004). Gear Vibration Analysis, *Phoenix Chapter of the Vibration Institute Meeting*, Phoenix, AZ, May, 2004.
15. Stansloski, M.J., (2004). Screw Compressor Vibration Analysis and Machine Theory, *Colorado Chapter of the Vibration Institute Meeting*, Denver, CO, July, 2004.
16. Stansloski, M.J., (2001). Using Vibration Analysis in a Condition Monitoring Program, *ASME Centennial Section Meeting*, Fort Collins, CO, April, 2001.
17. Stansloski, M.J., (1999). Fundamentals of Vibration Analysis, *Cargill Corporate Maintenance Conference*, Minneapolis, MN, 1999.
18. Stansloski, M.J., (1999). Advanced Vibration Analysis with Machine Theory, *Enteract 1999*, Orlando, FL, May, 1999.
19. Stansloski, M.J., (1998). Practical Applications for the Frequency Response Function, *Enteract 1998*, Cincinnati, OH, May, 1998.
20. Stansloski, M.J., (1998). Practical Applications for the Frequency Response Function, *Enteract 1999*, Orlando, FL, May, 1999.
21. Stansloski, M.J., (1998). Reliability Program Assessments, *Enteract/Southeast Asia 1998*, Sidney, Australia, June 1998.
22. Stansloski, M.J., (1997). Gear Analysis Using Vibration Technology, *Maintenance Technology Show*, Edmonton, Alberta, Canada, September, 1997.
23. Stansloski, M.J., (1996). Time Domain Analysis, *Western Region User Group Seminars for Entek IRD*, Portland, OR, Seattle, WA, San Francisco, CA, Los Angeles, CA, October, 1996.
24. Stansloski, M.J., (1996). High Frequency Demodulation Fundamentals, *Western Region User Group Seminars for Entek IRD*, Portland, OR, Seattle, WA, San Francisco, CA, Los Angeles, CA, October, 1996.

TEACHING - COLLEGIATE

| <u>Year</u> | <u>Semester</u> | <u>Course No./Title</u> | <u>Cr. Hrs.</u> | <u>Enrollment</u> |
|--------------------|------------------------|--|------------------------|--------------------------|
| 2023 | Fall | MECH 486A Senior Design Practicum | 4 | 125 |
| 2023 | Fall | MECH 486B Senior Design Practicum | 4 | 47 |
| 2023 | Spring | MECH 325 Machine Design | 3 | 57 |
| 2023 | Spring | MECH 324 Dynamics of Machines | 4 | 84 |
| 2016 | Spring | MECH 486b – Senior Design Practicum | 4 | 130 |
| 2016 | Spring | MECH 581A6 – Advanced Topics in Vibrations | 3 | 12 |
| 2016 | Spring | MECH 324 – Dynamics of Machines | 4 | 96 |
| 2015 | Fall | MECH 486a – Senior Design Practicum | 4 | 130 |
| 2015 | Fall | MECH 425 – Mechanical Vibrations | 4 | 11 |
| 2015 | Spring | MECH 486b – Senior Design Practicum | 4 | 123 |
| 2015 | Spring | MECH 324 – Dynamics of Machines | 4 | 81 |

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|------|--------|--|---|--------|
| 2015 | Spring | MECH 512 – Reliability Engineering | 3 | 12 + 3 |
| 2014 | Fall | MECH 529 - Advanced Mechanical Systems | 3 | 19 |
| 2014 | Fall | MECH 425 – Mechanical Vibrations | 4 | 20 |
| 2014 | Fall | MECH 486a – Senior Design Practicum | 4 | 123 |
| 2014 | Spring | MECH 324 – Dynamics of Machines | 4 | 45 |
| 2014 | Spring | MECH 425 – Mechanical Vibrations | 4 | 31 |
| 2014 | Spring | MECH 486b – Senior Design Practicum | 4 | 135 |
| 2013 | Fall | MECH 512 – Reliability Engineering | 3 | 20 |
| 2013 | Fall | MECH 324 – Dynamics of Machines | 4 | 123 |
| 2013 | Fall | MECH 486a – Senior Design Practicum | 4 | 136 |
| 2013 | Spring | MECH 480A3 – Mechanical Vibrations | 4 | 24 |
| 2013 | Spring | MECH 324 – Dynamics of Machines | 4 | 25 |
| 2013 | Spring | MECH 486b – Senior Design Practicum | 4 | 124 |
| 2012 | Fall | MECH 512 – Reliability Engineering | 3 | 12 |
| 2012 | Fall | MECH 324 – Dynamics of Machines | 4 | 107 |
| 2012 | Fall | MECH 486a – Senior Design Practicum | 4 | 125 |
| 2012 | Spring | MECH 480A3 – Mechanical Vibrations | 4 | 9 |
| 2012 | Spring | MECH 324 – Dynamics of Machines | 4 | 30 |
| 2012 | Spring | MECH 486b – Senior Design Practicum | 4 | 112 |
| 2011 | Fall | MECH 512 – Reliability Engineering | 3 | 5 |
| 2011 | Fall | MECH 324 – Dynamics of Machines | 4 | 124 |
| 2011 | Fall | MECH 486a – Senior Design Practicum | 4 | 113 |
| 2011 | Spring | MECH 512 – Reliability Engineering | 3 | 3 + 3 |
| 2011 | Spring | MECH 529 - Advanced Mechanical Systems | 3 | 24 |

Examples of Course Improvements

MECH 486a, 486b – Senior Design Practicum

The funding model for the Senior Design Practicum was not sustainable when I first was assigned to instruct the course. So, with my co-instructor, Bryan Willson, we generated a funding model that provides a project list with diversity in topic as well as source. Most importantly, the model allows the students to begin practicing as engineers on serious, real-world problems. The model is designed for a majority of projects to be supplied from industrial partners. Not only does this ensure real problems to solve, but also gives both the potential employer and employee a chance to discover each other. The remainder of the projects come from faculty inspired ideas and collegiate design competition challenges. Both of these sources provide ample opportunity for innovation.

MECH 324 – Dynamics of Machines

While this course had labs, which is not common for a course on dynamics, there was a need for serious updating. So, with the help of some honors students, we designed a number of new experiments for the labs. The new lab experiments, along with some rework of the old labs, have allowed us to move the lab experience from step-by-step procedures to a more open-ended design. The new design engages the students more completely.

MECH 512 – Reliability Engineering

This course lacked the practical application that is necessary to motivate students to truly learn the material. So I have adopted a new text which provides real examples, real data to analyze, and instruction on the most current tools in use today. In addition, I connect the students with industry partners who have a need for real reliability problems to be addressed. The students are required to engage with the partner in order to complete the project. Projects have ranged from a study of the failures within a new packaging line to electrical outages in a municipality.

Development of New Courses

MECH 425 – Mechanical Vibrations

The absence of a formal undergraduate course in mechanical vibrations was glaring to me when I began teaching at CSU. With the support of the department I created a proper course, taught it as a special course for two semesters, and then once I felt it was ready, ensured it was adopted into the curriculum. Attendance for the course has steadily climbed and the overall reviews for the course have remained excellent. One of the most important aspects included with this course are the open-ended lab assignments designed for the students to apply directly what they have learned in the classroom. We begin with the students writing basic code to process the signals I provide recorded from actual rotating machinery vibration. By the end of the course the students are designing their own virtual instruments in order to capture the data they have deemed necessary to provide a solution for the problem presented.

MECH 581A6 – Advanced Topics in Mechanical Vibrations

I created an advanced course covering the topics of modal analysis, torsional vibration, and rotordynamics targeted at graduate students focused on engineering mechanics. This three-credit course includes two lectures per week and two hours of lab per week. The labs include real world problems using standard industry tools.

TEACHING – PROFESSIONAL

Courses Developed and Taught Regularly in Public and Private Formats

| <u>Course Title</u> | <u>Contact Hours</u> | <u>Certifications</u> |
|--|----------------------|-----------------------|
| Introduction to Applied Vibration Analysis | 32 | ISO 18436-2 Compliant |
| Intermediate Applied Vibration Analysis | 40 | ISO 18436-2 Compliant |
| Advanced Applied Vibration Analysis | 40 | ISO 18436-2 Compliant |
| Dynamic Balancing | 24 | ISO 18436-2 Compliant |
| Root Cause Failure Analysis | 8 | NA |
| Plant Reliability | 40 | NA |
| Modal Analysis | 24 | NA |
| Fluid Film Bearing Analysis | 16 | NA |
| Rotordynamics | 40 | NA |

COMMITTEES

Chairman, Engineering Mechanics Working Group, FA2023
Chairman, CCAF Search Committee, FA2023
Member, Curriculum Committee, FA2023, SP 2023
Member, Engineering Mechanics Working Group SP2023
Member, Engineering Design Working Group, SP2023, FA2023
Member, External Relations Committee, FA2023
Chairman, Committee for Undergraduate Program Improvement, 2015 - 2016
Undergraduate Curriculum Committee Member, 2012 - 2016

PROFESSIONAL AFFILIATIONS

American Society of Mechanical Engineers, 2012 - present
Vibration Institute, 2003 - present
Society of Maintenance and Reliability Professionals, 2013 - present

OTHER ACTIVITIES – SERVICE/OUTREACH

Fundamentals of Engineering Exam Review – Dynamics, 2012 - 2016
Order of the Engineer Ceremony Presenter, 2012 - 2016
FSAE Advisor, 2011 - 14
Matlab Training Sessions – Offered regularly in conjunction with MECH 324, 2012 - 2016
Senior Design Team Advising – Minimum four teams per year, Ongoing
Senior Design Fund Raising – Solicit funds to support entire Senior Design Practicum budget, Ongoing