CURRICULUM VITAE

1. Name.

Steven J. Covey, Ph.D., P.E.

2. Academic Rank, Affiliation, Address, Phone, Fax, and Email.

Chair and Professor Department of Mechanical and Manufacturing Engineering St. Cloud State University 101D Engineering and Computing Center 720 Fourth Ave South St. Cloud, MN 56301-4498 320/308-5161 office covey@stcloudstate.edu

3. Degrees with fields, institutions, and dates received.

PhD, Materials Science and Engineering, University of Cincinnati, June 1993 MS, Engineering Mechanics, University of Wisconsin - Madison, May 1984 BS, Engineering Mechanics, University of Wisconsin - Madison, December 1982

4. Area(s) of expertise.

Exploiting interactions between mechanical design, material science, and manufacturing processes for product design and/or failure analysis including applications in the biomedical, aerospace, and computer industries. Specific areas include materials selection, solid mechanics, fatigue and failure analysis, finite element methods, stress analysis, composite materials, and manufacturing processes. Laboratory experience includes uniaxial/biaxial servo hydraulic mechanical testing, optical/SEM/AFM microscopy, material process simulations, fractography, and LabVIEW software.

5. Number of years of service at current position.

Thirty (30) years: original appointment date August 1993. Tenured September 1996.

6. Other related experience: teaching, industrial, etc.

Department Chair, Mechanical and Manufacturing Engineering, 77	7/21-6/23
Bucknell University, Visiting Professor (sabbatical)	8/15-5/16
Shanghai University of Engineering Science, Visiting Professor 7	7/15, 5/16-7/16
Boston Scientific, Visiting Research Scientist (sabbatical)	9/03-5/04
New Creation Engineering, LLC, Owner (consulting company)	5/02-6/22
NASA Glenn Research Center, ASEE Faculty Fellowship	Summer 1995
NASA Glenn Research Center, Visiting Scientist	1992-1993
U of Cincinnati, Adjunct Professor	Summer 1991
U of Cincinnati, Doctoral Fellow	1990-1992
MTS Systems, Project Engineer	1986-1990
U of Minnesota, Teaching Assistant	1985-1986
IBM Corp, Associate Engineer 1	1984-1985
U of Wisconsin - Madison, Teaching Assistant	1983-1984

Subharmonic Stress Relief – Welding, Park Industries	1/23-12/23
Pressure Vessel Design, C4 Welding	8/20-5/21
Automated Punch Press, Alexandria Industries	1/20-12/20
Sporting Clothing Design, Entrepreneur	8/19-5/20
Automation Cell, 3M Medical Systems	8/19-5/20
Expert Witness – Machine Design, Meshbesher & Spence	8/19-11/19
Automation Cell, 3M Medical Systems	8/18-5/19
Expert Witness, Amusement Ride, BLT Law Group	12/18-3/19
Fatigue Design, nVent	9/18-1/19
Finite Element Training, Park Industries	7/18-8/18
Automation Cell, Graco, Inc.	1/18-1/19
Thermal Stress Design, EBI, Inc.	4/18-10/18
Automation Cell, Miller Electric	8/17-6/18
Medical device design review, Boston Scientific	11/15-1/16
Basket translator design, Alexandria Extrusion	9/13-5/14
Random vibration exhaust fixture design, Cummins	9/13-5/14
Structural design, material specification of medical device, Synovis	9/12-5/13
Structural design, material specification of medical device, Synovis	9/11-5/12
Design of rapid joining mechanism for aircraft, Remmele	9/11-5/12
Learning modules: medical stent design and production, MnSCU	5/10-8/10
Latch mechanism assessment, APG Cash Drawer	8/09-10/09
Metal fatigue seminar, Halfmoon LLC	3/12/09
Surface topology study in electropolished stainless steels, DCI	6/08-5/09
Expert witness (recreational vehicle product failure), Socie and Bolt	7/08-1/09
Expert witness (prosthetic leg dysfunction), Zychowicz	7/08-3/10
Design/build an aortic heart valve fatigue tester, Boston Scientific	8/07-5/08
Design of a ball valve, DeZurik Valves	8/07-5/08
Design/build planar biaxial material test system, Boston Scientific	8/06-5/07
Expert witness (wheel chair failure), Sobalvarro	3/07-6/07
Biomedical product design, Boston Scientific	8/05-8/07
Expert witness (boat chair failure), Yira	8/05-11/06
Vacuum cup product design, Park Industries	8/04-5/05
Expert witness, Hansmeier	1/05-5/05
Stress analysis for product design, Cold Spring Granite	3/05-5/05
Biomedical product design using finite element, Boston Scientific	8/04-8/05
Expert witness (agricultural lift failure), Grunke	6/04-1/05
Biomedical product design w/ human tissue, modeling, Boston Scientific	9/03-6/04
Finite element analysis of quench cracking, new materials, ME Global	11/01-8/03
Pressure vessel design verification, DCI, Inc	8/02
Evaluation of austemper heat treat process, Whirltronics	11/01-5/02
Evaluation of production processes on stent quality, Boston Scientific	10/01-5/02
Prosthetic pump specified rotation design, TEC	9/01-3/02
Expert witness (ladder failure), Soucie, Buchman, and Bolt	10/01
Finite element analysis of pump for improved fatigue life, TEC	5/01-8/01
Finite element analysis of wood failure, Buchman	5/01-7/01
Redesign of tooling for pattern making, Cold Spring Granite	11/00-5/01
Expert witness evaluation and testimony, Grunke	9/99-9/00
Product design verification, DeZurik	9/99
Integral air spring / vacuum pump prosthetic design, TEC	6/99-6/00

Environmental System for Mechanical Test, Antioch	6/98 - 6/99
Biomaterial Process Optimization, TEC Interface Systems	9/98 - 4/99
Expert Witness, Higgins	10/98 - 4/99
Material Processing Training, Alexandria Industries	6/98 - 8/98
Expert Witness - Wood Failure Analysis, Soucie	2/98 - 11/98
Fatigue Life Optimization in Urethanes, TEC Interface Systems	11/97-9/98
Quench System Optimization, Alexandria Industries	8/97-5/98
Six Foot Saw Blade Dynamic Analysis, Energy Performance Systems	10/97-12/97
Heat-sink Failure Analysis, Zytec	7/97-10/97
Casting Process CFD Software Assess, Grede Foundries	6/96-5/97
Engineering Training, Tennant	6/96-7/96
Engineering Training, DeZurik Water Controls	6/96-9/96
Fatigue Analysis of Spring Failure FEA, Engel Metallurgical	2/96-5/96
SuperAlloy Weld Design, McNally Industries	8/95-10/95
Extrusion Process FEA Modeling, Alexandria Industries	9/95-5/96
Optimize 304 SS Forming Tools FEA, HTI	9/95-5/96
Planar Biaxial Test of 304 SS, NASA Glenn	6/05-8/05
Axial/torsion Tests of Composite Tubes, 3M Research	6/05-8/05
Micromechanical Test System Design, MTS Systems	8/94-10/94
Forming Process Optimization FEA, HTI	8/94-5/95
Wrench Design via FEA per Standards, Mayer Associates	9/94-5/95
Fatigue Crack Growth in Composites, 3M Research	9/93-1/95
Optimize 304 SS Forming Process FEA, HTI	5/94-9/94

8. Specific programs for faculty improvement.

ASM Failure Analysis of Medical Devices, Minneapolis, MN	February 2014
ASEE North Midwest Section Conference, Fargo, ND	October 2013
Nanotechnology Conference, St. Cloud, MN	February 2013
ASM Failure Analysis of Medical Devices, Minneapolis, MN	February 2013
ASEE North Midwest Section Conference, St. Cloud, MN	October 2012
Electron Microscopy and Microanalysis, Medtronic/Jeol, Fridley, MN	May 2008
Design of Medical Devices Conference, Minneapolis, MN	April 2009
Design of Medical Devices Conference, Minneapolis, MN	April 2008
FDA/NHLBI/NSF Workshop on Computer Methods for	March 2008
Cardiovascular Devices	
Biomechanics Workshop, BSCI, Maple Grove, MN	February 2008
Design of Medical Devices Conference, Minneapolis, MN	April 2007
Failure Analysis Conference, ASM, Minneapolis, MN	February 2007
Design of Medical Devices Conference, Minneapolis, MN	April 2006
BioInterface – Cardiac and Vascular Devices, Minneapolis, MN	October 2005
ASM Nitinol for the Medical Device Engineer, Minneapolis, MN	October 2005
Modeling of Human Vessel/Stent Interactions, BSCI, Maple Grove, MN	April 2005
ASM Materials and Processes for Medical Devices, St. Paul, MN	August 2004
Chairing the Academic Dept., American Council on Ed., Tampa, FL	Novem 2000
Extrusion Technology 2000, Chicago, IL	May 2000
American Society of Materials Seminar, Mpls, MN	February 2000

9. State(s) in which registered as a Professional Engineer.

Minnesota License Number 24385

10. Recent courses assigned.

GENG 101 Ethics and the Engineering Profession GENG 380 Engineering Communication MME 211 Materials and Structures MME 333 Manufacturing Processes MME 342 Machine Design and Fatigue MME 414 Composite Materials MME 420 Finite Element Methods MME 440 Solid Mechanics MATS 621 Materials Characterization Techniques MATS 623 Bulk Materials Characterization

11. Professional Organizations

American Society of Mechanical Engineers American Society of Engineering Educators American Society of Materials