

GARY MEAD

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EDUCATION

Doctorate of Philosophy in Education, Capella University, Minneapolis, MN.

Specialization: Professional Studies in Education. Dissertation: *Are Today's Automotive Technician Students Ready for the Increased Use of Ethanol Fuels: A Study of Students' Perceptions of Ethanol and the Effects of E20*. July, 2008.

Master of Science in Manufacturing Engineering Technology, Minnesota State University Mankato, Mankato, MN. Secondary Concentration: Management.

Alternative Plan Paper: *The Use of Rapid Prototyping for an Experiment in Airflow Research*. December, 2000.

Bachelor of Science in Automotive Engineering Technology, Minnesota State

University Mankato, Mankato, MN. Minor: Manufacturing Engineering Technology. May, 1999.

CURRENT EMPLOYMENT

January 2003 – Current Minnesota State University, Mankato Mankato, Minnesota

Associate Professor & Chair of AMET

I currently teach undergraduate courses in the Automotive and Manufacturing Engineering Technology program at Minnesota State University, Mankato. I am also the chair of the department and supervise senior design project groups and the general automotive laboratory.

Courses Taught

Introduction to Automotive Engineering Technology; AET 102 (1)
Automotive Technology & Systems; AET 160 (4)
Automotive Driveability and Diagnosis; AET 261 (4)
Automotive Computers and Electronics; AET 262 (4)
Automotive Thermodynamics and Engine Design; AET 366 (3)
Junior Design Project; AET 387 (3)
Vehicle Design and Construction; AET 435 (1-4)
Automotive Laboratory Experience; AET 465 (2)
Senior Design Project 1; AET 488W (3)
Senior Design Project 2; AET 489W (3)
Automotive Emission Design and Measurement AET 637 (3)
Automotive Experimental Research 1; AET 661 (2)
Automotive Experimental Research 2; AET 662 (2)

Current Research

Small Engine Emissions Testing Dyno Development (2019-2020)
FSAE Chassis Design, Development and Testing (2019-2020)

Past Research

Small Engine Ethanol Study, BR600s
Seasonal Storage Issues of Intermediate Ethanol Blends
Briggs 7 Stratton 5.25 Redo
Intermediate Ethanol Blends in Small Engines
Durability and Emissions of Two and Four Stroke Small Engines Running on Intermediate Ethanol Blends
Aftermarket E85 Conversions Using the MegaSquirt ECM
E20 Fuel Pump Endurance and Compatibility
The Effects of Bio-Gas on Engine Life
ATV E20 Emissions and Drivability
E20 Fuel System Materials Compatibility Study (Plastics and Elastomers)
E20 Metal Corrosion Study
Emission Characteristics of Ethanol Bio-Diesel Fuels
Miscellaneous Fuel Savings and Emissions Reduction Devices
Reduction of Catalytic Converter Efficiency due to Sulfur in Fuels

Projects Supervised

2019 Society of Automotive Engineers Formula SAE
Computer Simulation of the Engine and Chassis on a Drag Racing Truck (2019)
2018 Society of Automotive Engineers Formula SAE
Ford EcoBoost Nano Engine, Timing Gear Failure Study – Brandon Smith (2018)
TBEI, Paint Hooks and Truck Body Cart Upgrades–Nickolas Stolarczyk (2018)
Johnson Outdoors, Ergonomic Packaging Station – Harrison Sanders (2018)
2017 Society of Automotive Engineers Formula SAE
2016 Society of Automotive Engineers Formula SAE
2016 Society of Automotive Engineers Formula SAE
Toro Company, Lawn Mower Test Plan and Fixtures – Andy Hentges (2016)
2015 Society of Automotive Engineers Formula SAE
Mico, Brake Spring Risk Reduction – Zach Hall
MTU Onsite Energy, Material Handling of Pre-Paint Components – Jason Cole
2014 Society of Automotive Engineers Formula SAE
2013 Society of Automotive Engineers Formula SAE
2012 Society of Automotive Engineers Formula SAE
Handheld SNRE Intermediate Ethanol Blends
2011 Society of Automotive Engineers Formula SAE
2010 Society of Automotive Engineers Formula SAE
Non-handheld SNREs Intermediate Ethanol Blends
2009 Society of Automotive Engineers Formula SAE
Flex Fuel Conversion using the MegaSquirt ECM
2008 Society of Automotive Engineers Formula SAE
2007 Society of Automotive Engineers Formula SAE
2006 Society of Automotive Engineers Formula SAE

2005 Society of Automotive Engineers Formula SAE
2004 Society of Automotive Engineers Formula SAE
Toyota Turbo Emissions Project

OUTSIDE SERVICE

State of Minnesota Biodiesel Task Force, Technical Member, July 2015-July 2017

PROFESSIONAL DEVELOPMENT ACTIVITIES IN THE LAST FIVE YEARS

ATG Hybrid System Diagnosis, Eden Prairie, MN, November 2019
Formula SAE 2019, Brooklyn, MI, May 2019
Formula SAE 2018, Brooklyn, MI, May 2018
Formula SAE 2017, Brooklyn, MI, May 2017
Small Engines Technology Conference – Society of Automotive Engineers,
Charleston SC, October 2016
Formula SAE 2016, Brooklyn, MI, May 2016
Specialty Equipment Marketing Association (SEMA) Show Las Vegas, MN,
November 2015
Formula SAE 2015, Brooklyn, MI, May 2015

THESIS

Smith, C. *Developing a Commercial Product Using a Consumer Grade 3D Printer*, 2019.

Ertl, S. *Kinematic and Compliance Validation for Vehicle Modeling*, 2017.

PAPERS

Mead, G., & Olmstead, J. *Seasonal Storage Issues of Intermediate Ethanol Blended Fuels*, **PENDING**.

Mead, G., & Kariyawasan, C. *Enhanced Handheld Ethanol Engine Study*, 2017

Mead, G., & Olmstead, J. *Small Engines Storage Study Final Report*, 2016

Mead, G., & Jones, B. *Expanded Storage Study Final Report*, 2016

Mead, G., & Jones, B. *Enhanced Handheld Engine Ethanol Test Final Report*, 2016

Mead, G., Olmstead, et al. Presentation *SNRE Ethanol Research*, Expanded Uses of Ethanol, University of Minnesota, June 2014.

Mead, G., & Reek, C. *Briggs & Stratton 5.25 Redo Final Report*, 2014.

Mead, G., & Krahn, P. *Performance Testing of Ethanol Blends in 300 Hour, 4-Stroke Leaf Blowers*, 2013.

Mead, G., Jones, B., Steevens, P., Hanson, N., & Harrenstein, J. *An Examination of Fuel Pumps and Sending Units During a 4000 Hour Endurance Test in E20*, 2009.

Jones, B., Mead, G., Steevens, P., & Timanus, M. *The Effects of E20 on Metals Used in Automotive Fuel System Components*, 2008.

Jones, B., Mead, G., & Steevens, P. *The Effects of E20 on Plastic Automotive Fuel System Components*, 2008.

Jones, B., Mead, G., Steevens, P., & Connors, C. *The Effects of E20 on Elastomers Used in Automotive Fuel System Components*, 2008.

Mead, G., Jones, B., Steevens, P., Hanson, N., Devens, T., Rohde, C., & Larson, A. *The Effects of E20 on Automotive Fuel Pumps and Sending Units*, 2008.

PROFESSIONAL MEMBERSHIP

Member of the Society of Automotive Engineers, SAE

CERTIFICATION

AERA Engine Builder Association

Certified Engine Machinist (Pending)

Certified Cylinder Head Machinist (Pending)

National Institute for Automotive Service Excellent, NIASE

Tests A1 Engine Repair

A5 Brakes

A3 Manual Drive Train and Axles

A6 Electrical / Electronics Systems

A4 Suspension and Steering

A8 Engine Performance

WORK EXPERIENCE

Machine Programming Technician; Anertec Corporation; Owatonna, Minnesota

Automotive Diagnostic Software Test Technician; SPX Corporation; Owatonna, Minnesota

Electrical Technician; D and M Electric; Good Thunder, Minnesota

College Instructor; Minnesota State University, Mankato; Mankato, Minnesota

Student Teacher; Minnesota State University, Mankato; Mankato, Minnesota

CNC Operations Manager; Fab Shop by Cambria; St. Peter, Minnesota

Engineering Lab Assistant; Mankato State University; Mankato, Minnesota

Machine Tool Operator; Winco; LeCenter, Minnesota

CNC Lathe Operator; Mico Incorporated; North Mankato, Minnesota

Mechanical Assembler; FMC Corporation; Orlando, Florida