Jason K. Moore

CONTACT INFORMATION

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CITIZENSHIP

USA

RESEARCH INTERESTS

Multibody dynamics, manual control, vehicle dynamics, aircraft control, bicycle dynamics, handling and control, machine design, appropriate technology, human powered machines

EDUCATION

University of California at Davis, Davis, California USA

Ph.D., Mechanical and Aeronautical Engineering (expected graduation date: June 2010)

- Thesis Topic: Bicycle dynamics, control and handling qualities
- Advisor: Professor Mont Hubbard
- Area of Study: Multibody dynamics and control systems

M.Sc., Mechanical and Aeronautical Engineering, June 2007

- Advisor: Professor Mont Hubbard
- Area of Study: Multibody dynamics, control systems, and machine design

Old Dominion University, Norfolk, Virginia USA

B.Sc., Mechanical Engineering, December 2004

- *Magna cum Laude*
- Machine Design Specialization
- Minor in Mathematics
- Minor in Philosophy and Religious Studies

Tunstall High School, Dry Fork, Virginia USA

Advanced Diploma, May 2000

- Graduated with Honors

AWARDS

U.S. Department of State

- Fulbright Grant to the Netherlands, 2008-2009

University of California, Davis

- Campus Sustainability Grant (Human Powered Utility Vehicle Pilot Program), 2008
- Campus Sustainability Grant (Davis Bike Church Physical Space Renovation), 2008
- Graduate Student Association Travel Award, 2008
- Institute for Transportation Studies Travel Award, 2008
- Campus Sustainability Grant (Pedal Powered Charging Table), 2007
- Joseph Beggs Fellowship for Kinematics, 2006–2007
- MAE Department Fellowship, UC Davis, 2005–2006

Old Dominion University
- Governor's Technology Scholarship, 2000–2004

Academic Experience

Delft University of Technology, Delft, Zuid-Holland Netherlands

Fulbright Visiting Scholar and Researcher **August 2008 to present**

- Researcher in at the Bicycle Dynamics Laboratory.

University of California at Davis, Davis, California USA

Graduate Student **September 2005 to present**

Biomedical Engineer Researcher **August 2007 to present**

- Designed and supervised the fabrication of a cell shearing device.

Machine Shop Supervisor **January 2007 to June 2008**

- Supervised student machine shop in evening hours.
- Helped students with machining and fabrication projects.
- Safety class instruction.
- Machining and fabrication
- Shop organization

Action Research Team Facilitator **March 2007 to December 2007**

- Led group of students in the design and construction of a pedal powered desk laptop charging station.
- Competed in Google and Specialized's Innovate or Die Contest
- Featured in many articles and news broadcasts
- Published in the Human Powered Home by Tamara Dean.

Teaching Assistant **March 2006 to June 2007**

- Provided in-class support to undergraduate engineering students (EME 50, ENG 4, EME 250).
- Laboratory lectures: machine shop and drafting/CAD, graded assignments, administered tests, held office hours.

Assitant Action Research Team Facilitator **March 2006 to June 2006**

- Helped lead a group of students through starting a mock non-profit group.

Reader **September 2006 to December 2006**

- Graded mechanical design assignments (EME 250).

Old Dominion University, Norfolk, Virginia USA

Undergraduate Student **August 2000 to December 2004**

Maglev Tram Design Engineer **May 2004 to January 2005**

- Created a reference model of a magnetic levitation transport vehicle using AutoCAD Mechanical Desktop.

Langley Full Scale Tunnel Design Engineer **June 2004 to August 2005**

- Extensive modeling and drafting with Autodesk Inventor.
- Designed a portable floor system for the current car balance.
- Designed a six degree of freedom full scale car balance.
- Stress analysis reports for NASA specs.
- Test-model design, fabrication and repair.
- Support in daily activities (test preparation, taking data, etc.).

ODU HPV Team Project Lead **September 2003 to January 2005**

- Lead/managed a mechanical engineering senior design project
- Designed and constructed a human powered land vehicle
- Focused on bicycle frame, controls, stability, and drive train design
- Received 6th place out of 20 as a rookie team.
- Website designer and manager.

ODU SAE Formula Team Design Engineer **2001 to 2002**

- Designed and fabricated a scaled formula race car
- Extensive 3D modeling with AutoCAD Mechanical Desktop
- Designed and constructed the drive train and composite body

Danville Community College, Danville, Virginia USA

CNC Mill Operator **June 2001 to August 2001**

- Learned G-code/Manual Programming
- Learned FeatureCam 3D CAD/CAM software
- Programmed and operated a HAAS 3-axis mill

Conference Publications

Moore, J. and Hubbard, M., Parametric Study of Bicycle Stability. The Engineering of Sport 7: Proceedings of the 7th International Sports Engineering Association Conference. Biarritz, France. June 2-6, 2008.

Moore, J., Peterson, D., and Hubbard, M., Influence of Rider Dynamics on the Whipple Bicycle Model. 11th International Symposium on Computer Simulation in Biomechanics. Tainan, Taiwan, June 28-30, 2007.

Professional Accreditation

Passed the Fundamentals of Engineering Exam in Virginia

Professional Experience

Bauer Compressors, Norfolk, Virginia USA

Mechanical Design Engineer Intern **June 2003 to December 2003**

- Extensive 3D modeling with Autodesk Inventor
- Sheet metal design and fabrication
- V-belt drive designs
- Oil filtration system design
- Designed parts and prepared drawings for fabrication

Area Access, Norfolk, Virginia USA

Elevator Mechanic Assistant **May 2002 to August 2002**

- Installed and repaired elevators and various accessibility machines.
- Exposed to various electrical and mechanical systems.

Mark D. Moore Construction Company, Danville, Virginia USA

Carpenter **1995 to 2001**

- Residential house construction
- Framing, finishing, painting, drywall, hardwood floors, masonry

Service

Bicycle Mechanic and Organizer, Davis Bike Church, Davis, CA, September 2005 to present

- Raised $10,000 in donations and grants
- Organized parties, fundraisers, bike rides, work parties, outreach events
- Web site maintenance, shift scheduling, handled distributor orders, managed email listservs.
- Worked as a mechanic and taught bicycle repair.

Volunteer Engineer, Maya Pedal, San Andres Itzapa, Guatemala, Summer 2007
- Constructed pedal powered machines (i.e. blender, corn dekerneler/grinder, etc)
- Design work on a macdamia nut sheller
- Repaired bicycles
- Shop organization: tool boards, bike graveyard

Volunteer Engineer, Whirlwind Wheelchair International, Lusaka, Zambia, Summer 2006
- Worked at the Disacare Wheelchair Center
- Worked on the design and fabrication team for a bicycle ambulance trailer
- Fixture design and training

Volunteer Mentor, Virgnia Beach Public Schools, Virginia Beach, VA
Assisted high schools students with an engineering design competition.

Tour Leader, UC Davis Institute for Transportation Engineers, Davis, CA
Organized a group bicycle ride and museum tour.

Tour Guide, ODU College of Engineering, Norfolk, VA
Led open house tours for middle school children.

Bicycle Counter, Davis Bicycle Commission, Davis, CA
Participated in bicycle usage data collection.

Technical Skills

Extensive machining and fabrication experience: milling, turning, welding (MIG, TIG, ARC, Torch, Brazing), wood working, sheet metal work

Extensive drafting, solid modeling, CAD, CAM, and FEA experience. Proficient in: CADKEY, AutoCAD, AutoCAD Mechanical Desktop, Autodesk Inventor, FeatureCAM 3D, IntelliCAD, PATRAN/NASTRAN, PRO-Engineer/PRO-Mechanica, GMAX

Website design and maintenance: Homesite, Microsoft Front Page, Text HTML editors, Macromedia Dreamweaver

Dynamics and Simulation: Autolev, Axl/CampG, Simulink

Programming and Scripting Languages: C++, HTML, CNC/G-code

Graphics: Paint Shop Pro, Macromedia Fireworks, GIMP, Inkscape

Computational: Matlab, MathCAD

Instrumentation: LabVIEW

Operating Systems: Microsoft Windows

Other: Microsoft Office, Google Docs, OpenOffice, LaTeX, BibTeX, Endnote, JabRef, TeXnic Center