

John Mizia

418 Lyons, Fort Collins, CO 80521
(970) 988-0269 John.Mizia@Colostate.EDU

Education:

Colorado State University, Fort Collins, Colorado

Master of Science in Mechanical Engineering, with an emphasis in energy conversion and combustion dynamics
August 2003

Iowa State University of Science and Technology, Ames, Iowa

Bachelor of Science in Business Administration, with a double major in Management and Finance
December 1996

Employment:

Colorado State University, Fort Collins, CO

Aug 2012 – Present

Research Scientist, Office of the Vice President for Research

Director, Advanced Biomass Combustion Lab

Director, Rapid Prototyping Lab

- Director of a collaborative, multidisciplinary team designing, fabricating, testing, and evaluating biomass combustion systems for communities in developing countries. Responsible for managing all biomass combustion lab activity, securing funding, and coordinating tasks with graduate and undergraduate students. Lab research has totaled over \$3.0 million in technology development grants, including the Bill and Melinda Gates foundation, Global Alliance for Clean Cookstoves, Department of Energy, United Nations, and Envirofit International. Graduated 6 Masters students and supported over 20 undergraduate students with this funding.
- Launched the CSU Rapid Prototyping Lab in 2019, a campus wide applied engineering, data acquisition, and rapid prototyping service for funded researches across Colorado State University. Builds critical applied engineering skills for undergraduate and graduate students.
- Co-Inventor of a novel Fe, Cr, Si alloy for use in highly corrosive combustion environments.
- Developed several novel air-injection technologies for particulate emissions reduction (PM2.5) in biomass combustors. Demonstrated 95% reduction of PM 2.5 emissions in a rocket elbow combustor.
- Responsible for developing gaseous and particulate emissions sampling systems for combustion devices. Including CO, CO₂, O₂, NO_x, THC, PM_{2.5} and PM₁₀.
- Collaborate with Factor[E] Ventures on disruptive and innovative developing world technologies including a novel pit latrine dehydration system.

United Launch Alliance, Centennial, CO

Sept 2003 – Aug 2012

Atlas Booster Pneumatics Staff Engineer – Propulsion Systems Product Delivery Team (PDT)

- Atlas Booster Pneumatics Certified Responsible Engineer (CRE) and Booster Propulsion CRE-Delegate for the Atlas V launch Vehicle – a million Lbf thrust class RP-1/LO₂ fueled rocket capable of delivering approximately 65,000 Lbf to low earth orbit.
- Responsible for all flight propulsion system hardware and installation drawings as well as component and system level testing requirements and certification. The flight propulsion systems included propellant tank pressurization, purge gasses, hydraulic system, and RD-180 engine.
- Certified member of the material review board (MRB), a select group of engineers responsible for repair and use-as-is anomaly dispositions, root cause evaluation, and implementation of corrective actions. Responsible for all hardware, testing, and flight anomalies.
- Part of a small team of engineers responsible for the Atlas high pressure pneumatics, hydraulics, propellant feed, and the RD-180 RP-1/LO₂ rocket engine.
- Member of the Atlas Launch Tiger Team, a group of system experts that follow the Atlas Vehicle from Cradle to Launch, and certify the vehicle is ready for launch – reporting to the US military, NASA and ULA.
- Expert in high-pressure pneumatics, hydraulics, cryogenic systems, and high mass flow systems including system acceptance testing and risk reduction using hardware qualification.

- Worked on an advanced Propellant Utilization (PU) system, which actively controls combustion mixture ratio to ensure maximum performance and minimum residual propellants during engine shut down.
- Worked as the principal engineer on an R&D program that evaluated the impacts of immersing Composite Overwrap Pressure Vessels (COPV) in cryogenic fluids. Also completed a NASA COPV Damage Detection Course to satisfy requirements of AIAA S-081A.
- Provided technical expertise on Human-rating of the Atlas V launch vehicle for next generation Human space flight capabilities.
- Part of several process improvement initiatives including refined drawing release flow, PLM system advanced data manager, BOM and Engineering Change Notice integration, ANDON alert system, and integrated test procedure (ITP) on-line system for hardware and integrated system requirement verification.
- Worked on several manufacturing facility improvements including gaseous Helium conservation, workflow efficiency, and a clean sheet integrated Atlas V test facility.
- Held SECRET clearance 2005-2012

Engines and Energy Conversion Lab (EECL), Fort Collins, CO

April 2001 – Sept 2003

Graduate Research Assistant/Graduate Teaching Assistant

- Designed and automated a high pressure/temperature constant volume combustion test chamber (CTC) with a high-pressure common rail diesel injection system.
- Utilized CTC as a test bed to evaluate critical characteristics of microliter diesel injections including ignition speed and injection penetrations.
- Optically and chemically evaluated real time combustion dynamics using the CTC and on-engine testing.
- Worked in a team environment to bring an advanced micro-pilot diesel injection system from concept through full scale, on-engine demonstration.

New Belgium Brewing Company, Fort Collins, CO

July 1998 – Sept 2003

Mechanical Technician

- Designed, fabricated, and implemented equipment reliability and safety enhancements.
- Responsible for maintenance and spare parts of packaging system equipment including the slitter sealer, vertical conveyor, accu-glide, and palletizer.
- Worked independently on cooling system logic redesign, incorporating peak load shedding and future compressor additions as part of an energy reduction effort.
- Involved in several process improvements including real time chemical dosing system, utility reduction technologies, and packaging system redesign for high pressure air conservation.

Patents:

- **Side-Feed Forced-Air Biomass Burning Cookstove (US20160076774A1)**
Development of an air injection technology for the reduction of particulate matter in rocket elbow type, solid biomass combusting stoves.
- **Biomass stove with combustion chamber, vent door, and ash drawer (WO2017078762A1)**
Development of a charcoal burning, developing world cookstove, with high efficiency and novel radiation shielding combustion chamber.
- **Corrosion-resistant alloy and applications (WO2017160952A1)**
Development of ferritic alloys containing iron, chromium, and silicon which have enhanced corrosion resistance in biomass combustion exhaust environments.

Skills/Interests:

- FAA Part 107 Remote Pilot Certificate (UAS Pilot)
- Strategic Planning, Project Scheduling, Product data management (PDM), applied engineering
- Labview, C++, Matlab, Mathcad, CREO, Solidworks, Fluent, Fusion 360
- Camping, Hiking, Biking, Unmanned Aerial Vehicle Systems