

## Richard T. Buckley

### Summary of Qualifications

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| <ul style="list-style-type: none"> <li>▪ Aircraft Structural Integrity, Loads, Stress, Damage Tolerance Analysis</li> <li>▪ Automotive Engineering</li> <li>▪ Machine Design</li> <li>▪ Risk Analysis and Assessment</li> <li>▪ Design and Analysis of Aircraft Structures</li> </ul> | <ul style="list-style-type: none"> <li>▪ Static Strength, Static Stability, and Fatigue</li> <li>▪ Mechanical Testing and Analysis</li> <li>▪ Engineering Program Management</li> <li>▪ Lean Process Improvement</li> <li>▪ Teaching and Mentorship</li> <li>▪ Finite Element Analysis including Structural Composites and Thermal Analysis</li> </ul> |
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### Experience

June 2015 to Present	SAFE Inc.	Monument, CO
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#### Vice President

- Manage day-to-day operations, cost, schedule, technical performance of twelve engineers, \$2M annual Research & Development budget serving over 20 customers
- Develops and designs test and analysis programs to support multiple DoD and commercial customers
- Aircraft structural design and analysis, including fatigue, damage tolerance for DoD, commercial aircraft
- Finite Element Analysis, using SolidWorks, Fluent, Nastran. FDT analysis using AFGROW, NASGROW
- FAR Part 25 Stress and Fatigue and Damage Tolerance (FDT) Engineering Services
- Developed first FAA repair-spec for certification of Cold-Spray repaired parts for commercial aviation
- Program Manager – Managing Environmental Impacts on Time-Cycle Dependent Structural Integrity of High Performance DoD Alloys

Jan 2014 to June 2015	US Air Force Academy, Co	Colorado Springs, CO
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#### Deputy Department Head & Senior Military Faculty, Department of Engineering Mechanics

- Second in command for 60 member, \$35M department administering Mechanical Engineering and Systems Engineering Degrees
- Selected as Senior Military Faculty – Tenure equivalent military position
- Taught 300-level aircraft structures course including loads, stress, fatigue, damage tolerance analysis
- Oversaw execution and accreditation of 27 courses supporting 4,000 cadets and eight academic majors
- Assistant Professor teaching courses in Automotive Engineering, Engineering Measurement, Machine Design, Senior Design Capstone, Engineering Skills Seminar, Statics and Mechanics of Materials, Introduction to Engineering

July 2010 to Dec 2014	US Air Force Academy, Co	Colorado Springs, CO
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#### Applied Mechanics Lab Director, Department of Engineering Mechanics

- Directed all aspects of operations for the \$25M Applied Mechanics Lab in the Department of Engineering Mechanics
- Supervised 7 civilian, 2 military. Provides direct support to 27 courses, 2,200 cadets and \$35M of annual research
- Assistant Professor teaching courses in Automotive Engineering, Engineering Measurement, Machine Design, Senior Design Capstone, Engineering Skills Seminar, Statics and Mechanics of Materials, Introduction to Engineering
- Won 2011 and 2012 Base Safety team of the Year, numerous best practices during AFOSH and Unit Compliance inspections

April 2009 to June 2010	Oklahoma City Air Logistics Center	Oklahoma City, Ok
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#### Team Lead – B-1 High Velocity Maintenance

- Team lead for Air Force Material Command’s largest transformation program. Led a 39-member cross-discipline team dedicated to lean process design and improvement for Air Force Depot & Field Maintenance programs. Certified AFSO21 Green Belt

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<ul style="list-style-type: none"> <li>▪ Rapid-change team focused on increasing production line throughput, reducing tact time &amp; cost for all aspects of aircraft B-1B Program Depot Maintenance (PDM)</li> <li>▪ Organized and oversaw over 20 process definition and process improvement events.</li> <li>▪ Successfully executed the first fully planned, point-of-use kitted depot maintenance task at Tinker AFB reducing execution time by over 70%</li> </ul>		
July 2007 to April 2009	Oklahoma City Air Logistics Center	Oklahoma City, Ok
<p><b>Deputy Director, B-1 Engineering and Technical Support Squadron (554<sup>th</sup> ACSS)</b></p> <ul style="list-style-type: none"> <li>▪ As Deputy and acting director oversaw 39 engineers and equipment specialists responsible for technical support to the fleet of 67 B-1B aircraft in deployed and CONUS locations</li> <li>▪ Oversaw all technical aspects of over \$100M development programs and \$96M of sustainment programs for the B-1 fleet</li> <li>▪ Certified Aircraft Battle Damage Repair (ABDR) Engineer instructor responsible for training all Oklahoma City Air Logistics Center (OK-ALC) engineers deployed in support of combat operations. Trained 30 engineers over the course of two years in ABDR design techniques including worst case static loads and stress analysis techniques, design and analysis of joints</li> <li>▪ Won the 2009 AFMC General Bernard P. Randolph Engineering Team Award for the first ever replacement of a fire damaged B-1 wing on the island of Guam</li> </ul>		
July 2001 to July 2004	United States Air Force Academy	USAF Academy, CO
<p><b>Instructor, Assistant Professor, Deputy Lab Director, Executive Officer</b></p> <ul style="list-style-type: none"> <li>▪ Taught courses in Statics and Mechanics of Materials, Automotive Engineering, and acted as advisor for the SAE Mini-Baja Senior Design Capstone</li> <li>▪ Executive Officer to the department head responsible for day-to-day logistics and operations for the 30 person department</li> <li>▪ Deputy Lab Director for the Applied Mechanics Lab, responsible for day-to-day operations supporting 25 mechanical engineering courses for 1500 cadets</li> </ul>		
Jul 2000 to Jul 2001	Electronic Systems Center	Bedford, Ma
<p><b>Program Manager, Icelandic Air Defense System (IADS)</b></p> <ul style="list-style-type: none"> <li>▪ Led 10 person team of during request for proposal (RFP) phase of open-competition for the \$10M North Atlantic Treaty Organization (NATO) Icelandic Air Defense System (IADS) tactical datalink upgrade</li> <li>▪ Prepared Functional and Product Specifications, contract documents, prepared and executed an international industry day</li> </ul>		
Jul 1998 to Jul 2000	Electronic Systems Center	Bedford, Ma
<p><b>Deputy, Link-16 Program Office</b></p> <ul style="list-style-type: none"> <li>▪ Focal point for \$300 million integration effort of DoD's "Data Link of Choice" on 14 Air Force platforms. Responsible for technical support to Fighter Data Link installations onto the F-15C/D/E</li> <li>▪ Responsible for coordinating operational implementations among numerous airframes to ensure interoperability</li> <li>▪ Dealt directly with Aircraft System Program Offices, Secretary of the Air Force for Acquisition</li> <li>▪ Oversaw rapid development and deployment of Tactical Data Link gateway systems for operational use</li> </ul>		
Jul 1996 to Jul 1998	Aerospace Systems Center	Fort Walton Beach, Fl
<p><b>Lead Engineer, Joint Service Digital Bomb Rack (Smart Rack)</b></p> <ul style="list-style-type: none"> <li>▪ Technical lead for \$65 million effort integrating the first digital bomb rack onto Air Force and Navy aircraft</li> <li>▪ Chairman of sixteen member interface requirements development team representing Air Force and Navy program offices and contractors for the BRU-55 (Smart Rack), F-16, F/A-18, Joint Standoff Weapon (JSOW), Wind Corrected Munitions Dispenser (WCMD), and Joint Direct Attack Munition (JDAM)</li> <li>▪ Co-chair of JSOW Interface Control Working Group (JICWG) responsible for all technical and program issues associated with integrating JSOW on the F-16, F-15, F/A-18, B-1, B-2, B-52</li> <li>▪ Provided technical and programmatic support to the JSOW and WCMD programs</li> </ul>		

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Jul 1995 to Jul 1996	Aerospace Systems Center	Fort Walton Beach, Fl
<b>Aircraft Integration Engineer, Joint Standoff Weapon(JSOW) &amp; Wind Corrected Munitions Dispenser (WCMD)</b> <ul style="list-style-type: none"> <li>▪ Weapon program office focal point for \$9.5 million effort integrating the Joint Standoff Weapon on the B-2 stealth bomber.</li> <li>▪ Managed 10 member team of engineers and program managers responsible for standardized integration of three 21st century smart munitions, eight aircraft platforms, and one digital bomb rack.</li> <li>▪ Deal directly with weapon and aircraft System Program Offices, contractors and Air Combat Command (ACC) to facilitate communication and solve technical and programmatic issues related to the aircraft and weapons platforms.</li> </ul>		
<b>Education</b>		
Sep 2004 - June 2007	Colorado State University	Fort Collins, Co
<b>PhD – Mechanical Engineering</b> Dissertation, “Extending the Performance of Net Shape Molded Fiber Reinforced Polymer Composite Valves for Use in Internal Combustion Engines” <ul style="list-style-type: none"> <li>▪ Processing and manufacturing of Resin-Transfer molded composite materials</li> <li>▪ Non-linear finite element analysis of metallic and composite materials including transient thermal analysis</li> </ul>		
Sept 1993 – Jun 1995	Stevens Institute of Technology	Hoboken, NJ
<b>ME – Mechanical Engineering</b>		
Sept 1989 – May 1993	Stevens Institute of Technology	Hoboken, NJ
<b>BE - Mechanical Engineering</b>		
<b>Specialized Training</b>		
USAF Acquisition Professional Development Program: Program Management Level II, Systems Planning, Research, Development and Engineering Level III, Aug 2010 USAF Aircraft Battle Damage Repair Engineer Course, 2008 USAF Aircraft Battle Damage Repair Assessor Course, 2008 USAF Aircraft Battle Damage Repair Technician Course, 2008 AFSO21 Green Belt, 2015		
<b>Licenses/Certificates</b>		
Professional Engineer, Colorado, License Number 48240		
<b>Awards</b>		
US Air Force Academy Base Safety Team of the Year, 2012 USAF Department of Engineering Mechanics Outstanding Academy Educator, 2012 USAF Department of Engineering Mechanics Outstanding Instructor of the Year, 2012 US Air Force Academy Base Safety Team of the Year, 2011 US Air Force Senior Military Engineer of the Year, 2010 Air Force Material Command (AFMC) Senior Military Engineer of the Year, 2010 General Bernard P. Randolph Engineering Team of the Year Award, 2009 Department of the Air Force, Meritorious Service Medal, 2004, 2010, 2014, and 2015 Joint Service Commendation Medal, 1998 Department of the Air Force, Commendation Medal, 2001, 2003 Department of the Air Force, Achievement Medal, 1999, 2002		
<b>Professional Affiliations</b>		
Member, Society of Automotive Engineers (SAE) Member, American Society of Mechanical Engineers (ASME)		

## Richard T. Buckley

Member, National Council of Examiners for Engineering and Surveying (NCEES)

Member, American Society of Engineering Educators (ASEE)

### Publications

#### Archival Journal

Buckley, Richard, Radford, D.W., Stanglmaier, R., "Characterization and Processing of Carbon Fiber Reinforced PETI-RFI", Journal of advanced materials 2008, vol. 40, no2, pp. 17-32

Buckley, Richard T., "Extending the Performance of Net Shape Molded Fiber Reinforced Polymer Composite Valves for Use in Internal Combustion Engines," Doctoral thesis, COLORADO STATE UNIV FORT COLLINS DEPT OF MECHANICAL ENGINEERING

Buckley, R., Miwa, J., Stanglmaier, R., and Radford, D., "Light-Weight Composite Valve Development for High Performance Engines," SAE Technical Paper 2006-01-3635, 2006, doi:10.4271/2006-01-3635.

Buckley, R., Stanglmaier, R., Radford, D., and Willson, B., "A Prediction of Weight Reduction and Performance Improvements Attainable through the use of Fiber Reinforced Composites in I.C. Engines," SAE Technical Paper 2005-01-3693, 2005, doi:10.4271/2005-01-3693.

#### Conference Proceedings

Rhymer, D.W., Buckley, R.T., Jensen, D.D., "The Effect of Student Narration on Senior-level Engineering Classes," Proceedings of the 2012 American Society for Engineering Education Annual Conference, San Antonio, TX, 2012.

Christie, E., Jensen, D., Buckley, R., Menefee, D., Ziegler, K., Wood, K., Crawford R., "Prototyping Strategies: Literature Review and Identification of Critical Variables," ASEE Annual Conference, San Antonio, TX, June 2012.

Richard T. Buckley and Donald W. Radford , "RTM OF HIGH TEMPERATURE POLYMERS FOR ENGINE VALVES." SAMPE, 39th ISTC - Cincinnati, OH - Oct 29 - Nov 1, 2007

Buckley, Miwa, Radford, Stanglmaier, "Exploring the Potential Advantages of Light-Weight Valves in Internal Combustion Engines, ASME 2006 Internal Combustion Engine Division Spring Technical Conference (ICES2006), Paper no. ICES2006-1318 pp. 43-52

Buckley, Miwa, Radford, Stanglmaier, "Design Process for Resin Transfer Molded, Fiber Reinforced Poppet Valves for Internal Combustion Engines," ASME 2006 Internal Combustion Engine Division Spring Technical Conference (ICES2006), ISBN: 0-7918-4206-1