

# BUSINESS CURRICULUM VITAE

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July 2010

## WOOLLEY ENGINEERING RESEARCH CORPORATION

5314 North 250 West, Suite 330

Provo, Utah 84604

wer.com

Tax ID: 84-1395172

Telephone: (801) 431-0220

Facsimile: (801) 431-0071

### FACTS

Established: February 1991

Employees: 7

Types of Cases: Product liability defense, other non product liability cases approximately 50% plaintiff 50% defendant

Publications in field: 24

Member of Provo-Orem Chamber of Commerce

### BUSINESS DESCRIPTION

Mechanical engineering experts specializing in automotive related accident reconstruction, technical analysis, design analysis, biomechanical injury analysis, and crash worthiness. We have extensive experience in automotive accidents involving side impact, rollover, fire, narrow object impact and offset impact. Among our company's capabilities are specialized techniques developed for vehicle and site inspections, camera reverse projection photogrammetry, product testing and crash test evaluation and testing.

### LEVELS OF WORK

There are several levels of work involvement along with associated costs. We have incorporated the ability to produce budgets and work statements based upon past experience and the new application of tools and procedures. Listed below are a few of the general levels of work that we have identified:

- "In-office"                      An examination of materials provided along with reconstruction calculations using educated assumptions. No inspections made, everything based upon what we can research in the office.
  
- "Quick-Reaction"                Inspections of recent accidents. Recent refers to days or weeks as opposed to months or years. General purpose of the "Quick-Reaction" is to document perishable physical evidence found at the accident site as well as the involved vehicles. Early investigation often provides valuable insights prior to litigation and provides a good foundation for a detailed reconstruction if required. This work can be performed hourly with defined tasks or for a fixed cost.
  
- "Standard"                        Our "standard" procedure is to evaluate, inspect, reconstruct, report findings, and prepare for deposition and trial if necessary. This work is performed on an hourly basis under close coordination with every attempt made to minimize the total cost.

We have identified areas within each of the levels of work that can be forecast readily: inspection, data reduction, reconstruction, injury analysis, and presentation of the results in the form of report, presentation, deposition, or trial testimony. Other such projects can be performed and budgeted for either a "fixed cost" or a "not-to-exceed cost". These would include: exemplar vehicle searches, surrogate occupants, video presentations (animations), advanced computer simulation, special exhibit preparation, Dynamman occupant motion simulation, MADYMO occupant simulation, testing, etc.

### CAD/GRAPHICS CAPABILITIES

Microstation: 2D and 3D CAD suite for the PC, AutoCAD compatible

Other: Computer animation for video presentations of accident reconstructions

Video Caputure/Editing, Digitizing, both 2D and 3D

### SPECIALIZED EXHIBIT PREPARATION

Damaged and undamaged scaled 3D vehicle models

Scaled, Accurate, 2D and 3D Accident scenes depicting terrain of accident with scale models

Electronic imaging and printing to any scale

Preparation of courtroom ready vehicle components or sections

Computer Animation, video composition and presentation

### ANALYSIS CAPABILITIES

ATB: Articulated Total Body, occupant simulation program. Official Air Force version ATB-IV  
 CRP: Camera Reverse Projection Photogrammetry  
 DYNAMAN: Occupant simulation program (PC version of ATB and CVS by GESAC, Inc.)  
 EDSMAC: Engineering Dynamics PC version of SMAC  
 EDSVS, EDVTS: Engineering Dynamics PC version of TBSTR, TBSTT  
 EDCRASH: Engineering Dynamics PC version of CRASH-3  
 HVE: Engineering Dynamics PC Human Vehicle Environment simulation modeling program  
 IMPAC: "Impact Momentum of a Planar Angled Collision", 2D conservation of momentum collision model  
 MADYMO: Occupant and vehicle simulation program using multi-body and FE modeling  
 NHTSA Crash Tests: NHTSA crash test database of over 2000 tests performed for Dept. of Transportation  
 PCCRASH: Macinnis Engineering planar momentum and tire modeling program  
 Phase4: UNTRI tractor /trailer trajectory simulation program over 3D terrain with up to 3 trailers  
 PHOTO 2D/3D: Analytical photogrammetry for both 2D and 3D applications  
 VDANL: "Vehicle Dynamics Non-Linear", 3D vehicle dynamics simulation.

**EXEMPLAR VEHICLE / SURROGATE OCCUPANT**

Exemplar Vehicles: The ability to locate and lease a vehicle matching the same year, make, model, etc.  
 Surrogate Occupants: The fact that we are located near Brigham Young University provides us with a large statistical population to choose from when matching height, weight, etc.

**TESTING CAPABILITIES**

Brigham Young University Department of Mechanical Engineering Instrumentation Laboratory:  
 (Minimal cost to lease any instrumentation equipment)  
 MMB: Massive Moving Barrier -- the ability to perform unusual and standard crash configurations on single test vehicles in order to obtain crush energy or acceleration pulse information  
 Rollover: Vehicle steering and braking controller for rollover initiation

**TEST INSTRUMENTATION CAPABILITIES**

GMW Engineering Data Brick, accelerometers, string pots, and speed sensor for quantification of vehicle performance or crash test measurement

**BUDGETS AND BILLING PRACTICES.**

With respect to the levels of work identified earlier, "In-office" evaluations can be performed for a nominal fee; the other levels, "Quick-Reaction" and "Standard" can both be estimated if necessary.

We desire close coordination with the case manager with regard to the scope of the work to be performed, and would also prefer a desired completion date for the work requested. Close coordination allows us to satisfy the needs and minimize costs. Our goal is to efficiently complete a preliminary accident reconstruction shortly after inspections.

No advance retainer is required at the start of a new case, unless an immediate and extraordinary expense is anticipated. Interest is charged at 1.5% per month on accounts unpaid 60 days after the date of the statement. The 60-day period may be extended, within reason, when payment processing procedures require.

**EMPLOYEES**

<b>Employee</b>	<b>Professional Experience</b>
Ronald L. Woolley, P.E., PhD.	Since 1980
Alan F. Asay, P.E., M.S.	Since 1986
Dagmar Buzeman Jewkes, Ph.D.	Since 1998
Blake M. Ashby, P.E., Ph.D.	Since 2007
Craig G. Hurd, A.S., Technician	
LeeAnna Marlais, B.S., Technical Assistant	
Melinda M. Coleman, A.S., Technical Assistant	

**AFFILIATIONS OF EMPLOYEES**

American Society of Mechanical Engineers (ASME)  
 Society of Automotive Engineers (SAE)  
 Association for the Advancement of Automotive Medicine (AAAM)