

## JASON DANTE BARDIS

107 S. Sierra Madre Blvd #5  
Pasadena, CA 91107

(626) 808-3042  
<http://www.infernolab.com>

### WORK EXPERIENCE

- **Mechanical Design Engineer: Alliance Spacesystems: Winter 2005 – Present**
  - Designed mechanisms, tests, and hardware; wrote assembly instructions; conducted testing; presented & reviewed at design reviews.
  - Involved in the following programs:
    - NASA/JPL Mars Phoenix lander robotic arm structure design, arm launch locks design & tests, & arm static tests.
    - NASA/JPL Mars MSL rover mast cameras design, robotic arm tests, & cruise stage assembly tooling concept.
    - NASA/JPL GEMS & MACO scout mission proposal conceptual design.
    - MIDAS drill/corer tool change mechanism with remote center compliance.
    - SUMO satellite robotic arm mass equipment list & master interface document.
    - No Boundaries folding & disassembling portable mobility scooter conceptual design & prototype construction & testing.
  - Wrote & presented “Lunch & Learn” lecture on designing with composite materials.
- **Applications/Design Engineer: ThinGap Motor Technologies: Fall 2002 – Winter 2005**
  - Designed & developed brush & brushless DC electric motors, manufacturing equipment, & assembly tooling for UAVs, medical devices, power tools, fans, robots, servo, & DARPA research projects.
  - Managed & performed design & manufacture on twelve projects:
    - Involved in initial customer requirements, concept designs, quotation process.
    - Coordinated design effort, conducted design reviews, developed complete detailed drawing print packages, including bills of materials with full part cost & manufacturing labor cost information.
    - Dealt with vendors, purchased & inspected parts, managed project-related inventory levels.
    - Developed manufacturing tooling & processes, including written manufacturing instructions.
    - Oversaw & contributed to manufacture, testing, & delivery of finished products.
    - Supported customer in installation & troubleshooting of motors.
  - Performed frequent hands-on machining, assembly, testing, & modification of motors & tooling.
- **Consultant : Federal Aviation Administration: Spring 2002**
  - Project: “Technical Transfer of Surface Preparation Effects to Industry”.
- **Robot Puppeteer: *Grownups* sit-com, UPN / Sony Culver City Studios: Winter 2000**
- **Research Assistant & Consultant: UCSB / FAA: Spring 1999 – Spring 2002**
  - “Effects of surface preparation on the long-term durability of adhesively bonded composite joints”.
  - Compared & rated various pre-bond surface preparation methods.
  - Evaluated & analyzed various strength-based & fracture-mechanics-based test methods.
- **Research Assistant: UCSB / Boeing / McDonnell Douglas: Fall 1997 – Spring 1999**
  - Studied effects of accelerated aging (elevated temperature & pressure) on composites.
  - Designed, constructed, & tested an open hole compression fixture & test method.
- **Lab & Manufacturing Technician: Boeing Composite Prototype Lab, Long Beach, CA: Summer 1997**
  - Monitored CNC stitching machine, ran autoclaves, prepared epoxy resin sheets, bagged parts .
  - Created test fixtures & test specimens, designed & constructed tooling & jigs.
- **Movie Effects Machinist: *Mimic*, Character Shop, Canoga Park, CA: Summer 1996 & Movie Effects Lighting Designer: *Star Trek: First Contact*, Todd Masters Co., Arleta, CA: Spring 1996**
- **Project Analyst: Princeton Transportation Consulting Group, Burlington, MA: Summer 1993 – Summer 1994**
  - Performed routing systems analyses, designed & tested software interfaces, trained clients
  - Designed & wrote product’s Windows on-line help & written user’s manual.

## **RELATED PROJECTS & OTHER WORK EXPERIENCE**

- **Robot Combat Competitor: BattleBots, Robotica, Robot Wars, BotBash, Steel Conflict, ROBOlympics, Sozbots, RoboJoust, LEGO Mindstorms RoboGladiators, LEGO Mindstorms Mayhem, RoboGames: Winter 1996 – present**
  - Designed, built, & competed with over a dozen entries in over a dozen robot combat competitions. Won several trophies including BattleBots lightweight duels & rumble.
  - Robots & I appeared on TV, radio, magazines, books, newspapers, trade shows, art shows, & web pages. Raised thousands of sponsorship dollars in products, materials, services, & cash.
  - Started own robotics business that turned profitable in 2nd year. Developed [www.infernolab.com](http://www.infernolab.com) website documenting robots, selling products, & providing tutorials.
  - Volunteered as judge & safety inspector at several events. Helped organize & promote Spring 2003 Sozbots 2.4 event in Santa Barbara.
- **Volunteer/Participant: RoboChallenge, Santa Maria/Santa Barbara: Winter 2002 – present**  
*RoboChallenge is a program designed to reach grade school & high school students from under-served communities with LEGO Mindstorms robotic challenges.* Created & participated with tug-o-war & sumo LEGO robots. Gave lectures, tutorials, & demonstrations on topics including LEGO robotics, BattleBots, mechanical engineering, & college studies to young students.
- **Manufacturing & Computer Consultant: Dr. Ernst's Laboratoires, Capellen, Luxembourg: Summer 1995 (business conducted entirely in French)**  
Studied & critiqued company's current manufacturing setup. Designed, ordered, & installed new computer-controlled manufacturing systems. Instructed employees in office computer usage.
- **Computer Technician: Facilities Management, UCSB: Fall 1994**  
Networked, supported, upgraded, & troubleshoot Macintosh & PC computers & peripherals.
- **Teaching Assistant: Cornell University: Spring 1993, UCSB: Winter 1994 – Winter 1999**  
Robot Control, Robot Mechanics, Electromechanical Design, Mechanical Engineering Design, Introduction to Design, Design of Engineering Systems, Machine Shop, Biomechanics
- **Consultant: Cornell Masters Degree Project, Therm, Ithaca, NY: Fall 1992 – Spring 1993**  
Studied operations of jet engine turbine blades plant, designed robotic welder fixture, analyzed gas flow of welding shielding gas, group increased manual & robotic weld quality & performance feedback.
- **Design Engineer: Ford Hybrid Electric Vehicle Team, Cornell University: Spring 1992**  
Designed frame for battery/methanol-powered car; modeled frame on computer; built mockups; worked with others to incorporate suspension, drivetrain, etc. Vehicle won national competition.

## **SKILLS**

Machine shop; SolidWorks; COSMOSWorks; PhotoWorks; DBWorks; Pro/Engineer; AutoCAD; ANSYS; Geometric Dimensioning & Tolerancing; Mathematica; MS Office; Photoshop; Illustrator; Canvas; Dreamweaver & other HTML/web design; languages: French, C, Fortran, Pascal, BASIC, assembly

## **INTERESTS**

SAE, ASME, robotics, swing dance (public performance, & teaching), home improvement/remodeling, Habitat For Humanity, LEGO, autocrosses & rallies & go-karting, web page design, music DJ, pinball league, video game collecting/repair, car repair/upgrades, cycling, racquetball, certified open water SCUBA diver

## **EDUCATION**

- **University of California Santa Barbara: Mechanical Engineering—Solid Mechanics & Structures**  
*Doctor of Philosophy: concentration in composite materials, March 2002, GPA: 3.5*
- **Cornell University: Mechanical & Aerospace Engineering**  
*Master of Engineering: concentration in Manufacturing, May 1993, GPA: 3.6*  
*Bachelor of Science, May 1992, GPA: 3.2*

## **PUBLICATIONS & PRESENTATIONS**

- Bardis, Jason D., "Look Ma, No Driver! A Look at the Long Beach Grand Prix", *Servo Magazine*, August 2008, pp. 49-54.
- Bardis, Jason D., "How to Design with Composite Materials", Lunch & Learn Lecture presentation at Alliance Spacesystems, March 6, 2008.
- Kedward K., and Bardis J., "Surface Preparation Evaluation for Bonded Composite Laminates", *17th Annual ASC Technical Conference*, Purdue University, West Lafayette, IN, October 21, 2002.
- Bardis, Jason Dante, "What is a Composite Material?", *BattleBots Magazine*, issue #3, Summer 2002.
- Bardis, Jason D., and Kedward, Keith T., "Technical Transfer of Surface Preparation Effects to Industry", MIL-17 Handbook/CACRC meeting, Miami, FL, March 22, 2002.
- Bardis, Jason D., and Kedward, Keith T., "Surface Preparation Effects on Mode I Testing of Adhesively Bonded Composite Joints", *Journal of Composites Technology & Research*, vol. 24, no. 1, January 2002, pp. 30-37.
- Bardis, Jason D., and Kedward, Keith T., "Effects of Surface Preparation on Long-Term Durability of Composite Adhesive Bonds", MIL-17 Handbook meeting, Santa Barbara, CA, October 15, 2001.
- Bardis, Jason D., "A BattleBots Champion Insight," BattleBots IQ school curriculum, Chapter 8.1: "Introduction to Design", August 2001.
- Bardis, Jason D., and Kedward, Keith T., "Effects of Surface Preparation on Long-Term Durability of Composite Adhesive Bonds", SME Technical Paper #EM01-341 (Dearborn, MI: Society of Mfg. Engineers, 2001), and 13th International Conference on Composite Materials (ICCM) Proceedings, Beijing, China, June 25-29, 2001.
- Bardis, J. D., and Kedward, K. T., "Effects of Surface Preparation on Long Term Durability of Composite Adhesive Bonds," FAA Technical Report DOT/FAR/AR-01/8, April 2001.
- Bardis, Jason Dante, "How to Avoid BattleBot Self-Destruction," BattleBots.Com Tips from the Pros, January 2001.
- Bardis, Jason Dante, "Robot Wheel Comparison Guide Brief," BattleBots.Com Tips from the Pros, January 2001.
- Tsotsis, T. K., Keller, S., Lee, K., Bardis, J., and Bish, J., "5000 Hours Aging of Polymeric Composite Specimens Under Elevated Pressure and Temperature," *Composites Science & Technology*, vol. 61, 2000, pp. 75-86.
- Bardis, J. D., and Kedward, K. T., "Effects of Surface Preparation on Long Term Durability of Composite Adhesive Bonds," *15th Annual ASC Technical Conference: Proceedings*, College Station, TX, September 24-27, 2000.
- Bardis, J. D., Kedward, K. T., Bish, J. O., Tsotsis, T. K., "A New Compression Test Fixture for Unnotched or Notched Thin Composite Laminates," *Journal of Composites Technology & Research*, vol. 22, no. 3, July 2000, pp. 136-145.
- Bardis, J. D., Kedward, K. T., Bish, J. O., Tsotsis, T. K., "An Alternate Compression Test method for Notched and Unnotched Composites," *45th International SAMPE Symposium: Proceedings*, Long Beach, CA, May 21-25, 2000, pp. 1149-1152.
- Bardis, Jason, and Kedward, Keith, "Surface Preparation for Adhesively Bonded Composite Joints," poster presented at *14th Annual ASC Technical Conference*, Dayton, OH, September 27-29, 1999.
- Tsotsis, T. K., Keller, S., Lee, K., and Bardis, J., "3000 Hours Aging of Polymeric Composite Specimens Under Elevated Pressure and Temperature," presented at *44th International SAMPE Symposium*, May 1999 (closed paper).
- Tsotsis, Thomas K., Keller, Scott, Bardis, Jason, and Bish, Jack, "Preliminary Evaluation of the use of Elevated Pressure to Accelerate Thermo-Oxidative Aging in Composites," *Polymer Degradation and Stability*, vol. 64, 1999, pp. 207-212.
- Bardis, Jason, "Hybrid Electric Vehicle," *Cornell Engineer*, April 1992, p. 4.