Education

BS Mechanical Engineering

Lehigh University

Focus areas: CAD, Additive Manufacturing, Integrated Product Development

MS Mechanical Engineering

Lehigh University

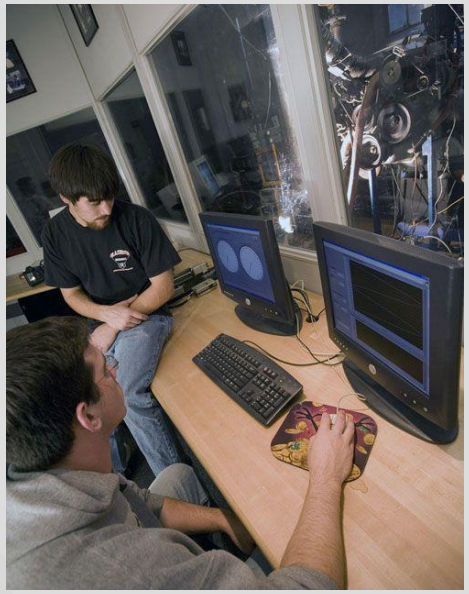
Focus areas: Laser-Engineered Net Shaping (LENS), large scale automotive testing

MS Medical Engineering

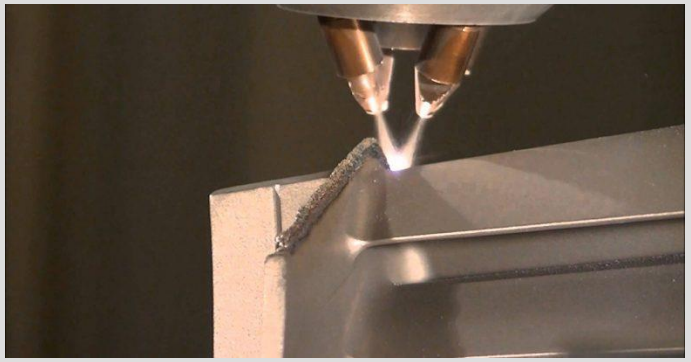
University of Washington

Focus areas: Medical device design, human factors, anatomy, physiology

2000



Helped raise funds for and led construction of Lehigh's engine testing lab



Developed thermodynamic models for LENS metal 3D printing technology

Honda R&D

Design Engineer

Honda R&D Americas

- Responsible for design, supplier management, and production startup for exterior components on several Honda vehicles, including the wiper, washer, sunroof, tailgate, and portions of the door systems for the Honda Ridgeline
- Similar responsibilities on other Honda and Acura models (Acura TL, Element, etc.)

Left – Current Honda Ridgeline, Center – Honda Element, Right – Dealer website explanation of Ridgeline Tailgate system

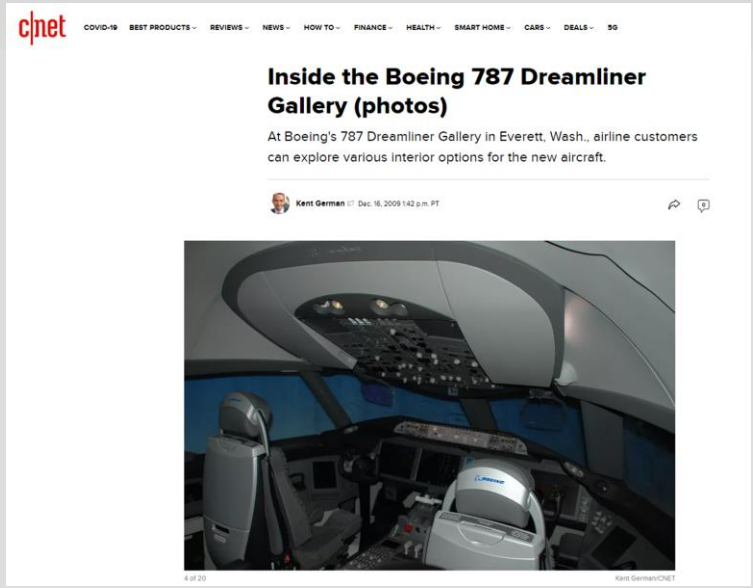
2000-2004

Boeing 787 Flight Deck

Systems Engineer

Boeing Commercial Airplanes

- Designed, developed requirements for 787 cockpit systems, built test hardware and software (via Labview) and conducted flight tests to validate function
- Built 787 flight deck mockup (CAD, fabrication, electronics) used for airline demos, FAA evaluations



Left – marketing image of 787 flight deck, Center – physical mockup of in 787 Gallery, 787 on typical flight test day

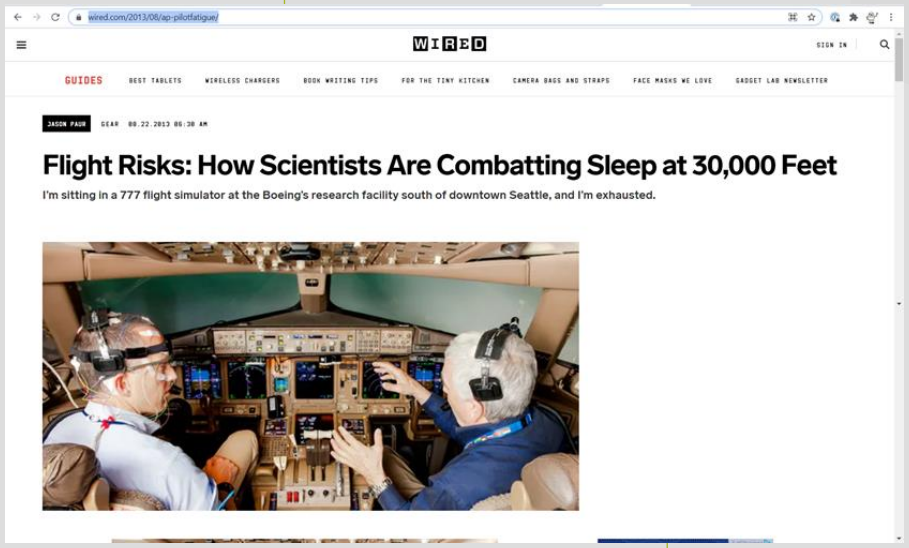
2004-2007

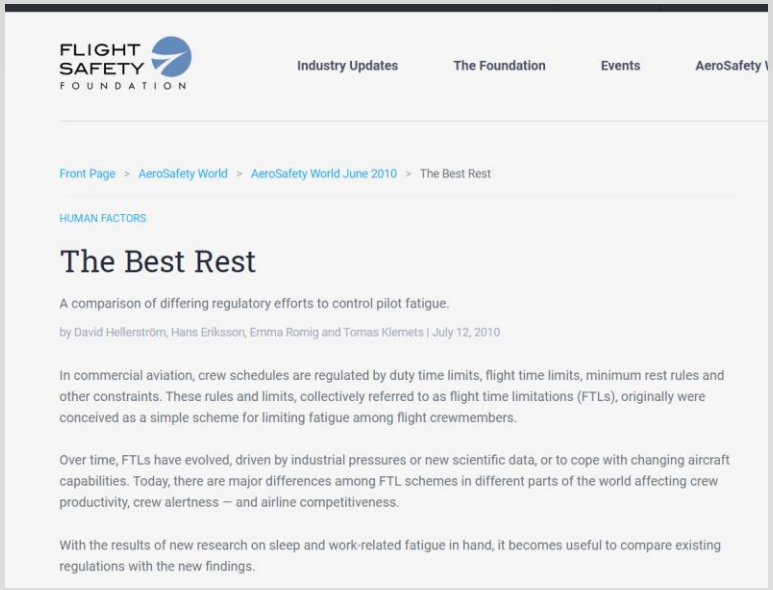
Boeing Flight Deck R&D

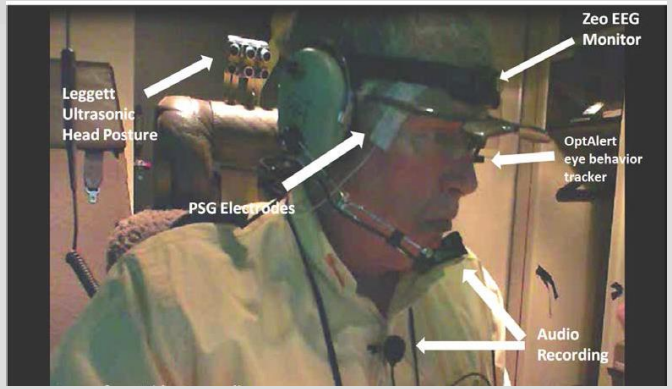
Principal Investigator

BCA Flight Deck R&D

- Subject matter expert on human factors issues for flight crews including cosmic radiation, human fatigue/tiredness vs. performance
- Assisted in the development of new flight and duty time regulations for pilots in support of FAA, NTSB and their international equivalents







Left – Wired magazine article on pilot fatigue experiment, Center – example of article on physiological modeling for improved flight & duty times, Right – explanation of physiological measurements on pilots

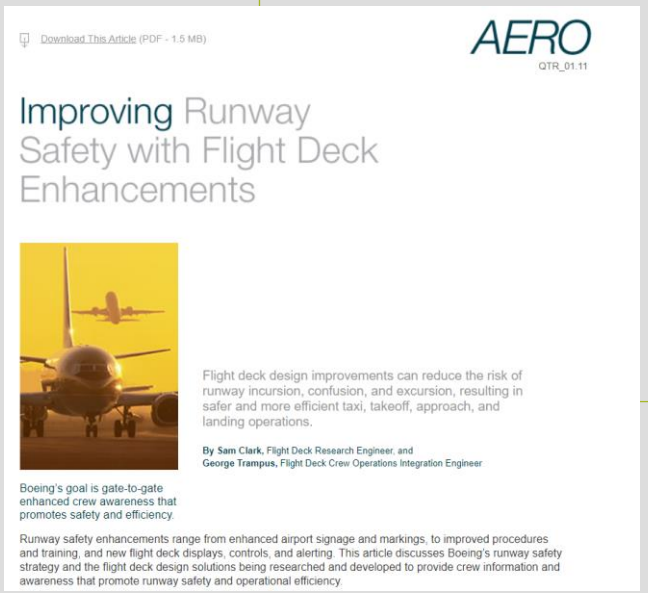
2007-2011

Boeing Flight Deck R&D

Lead Engineer

BCA Flight Deck R&D

- - Lead engineer for new flight deck (cockpit) technologies focused on improving aviation safety including runway collision avoidance, flight management, and human factors improvements
- - Represented Boeing to industry groups, standards bodies, and international regulators



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AERO

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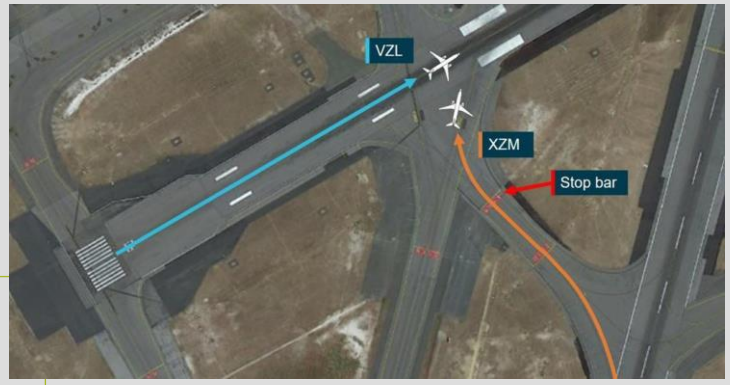
Improving Runway Safety with Flight Deck Enhancements

Flight deck design improvements can reduce the risk of runway incursion, confusion, and excursion, resulting in safer and more efficient taxi, takeoff, approach, and landing operations.

By Sam Clark, Flight Deck Research Engineer, and George Trampus, Flight Deck Crew Operations Integration Engineer

Boeing's goal is gate-to-gate enhanced crew awareness that promotes safety and efficiency.

Runway safety enhancements range from enhanced airport signage and markings, to improved procedures and training, and new flight deck displays, controls, and alerting. This article discusses Boeing's runway safety strategy and the flight deck design solutions being researched and developed to provide crew information and awareness that promote runway safety and operational efficiency.



Left, Center – implementation of runway collision avoidance on Boeing's airplanes, Right, lower portion of image shows implementation of Vertical Situation Display (VSD)

2011-2013

Boeing Advanced Manufacturing

Engineering Manager, Advanced Manufacturing Product Development/777X

- - Leased, outfitted, and staffed an off-site R&D center to test automation and airplane build concepts, including robotics cells, 3D printing/additive fab, manual and CNC prototyping capability
- - Led the retrofitting of production facility at Boeing's Everett site to produce "80' box", trial of 777X Wing production system
- - During this period achieved a 4:1 ratio of booked manufacturing improvements to dollars invested.

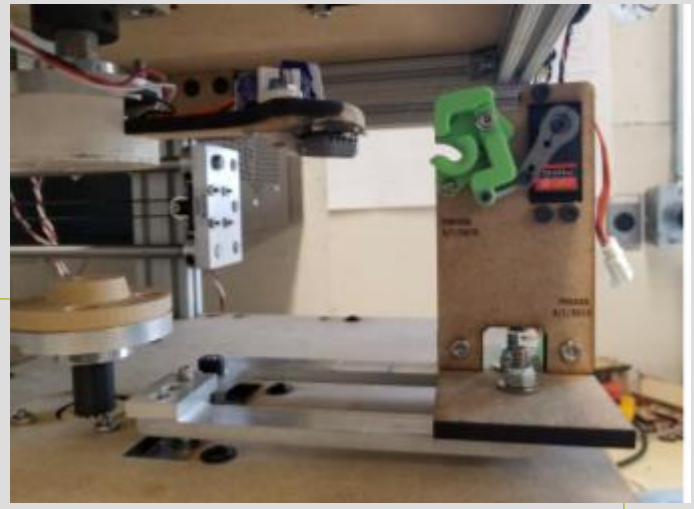
Left – 777X wing factory implementation of developed technology, Right 777X roll-out

2013-2015

Boeing Advanced Manufacturing

Engineering Manager, Advanced Manufacturing Product Development/777X

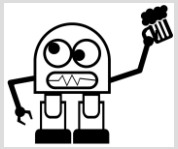
- Defined and executed ~100M/yr of BCA's Manufacturing Technology investment including allocation of budget, selection of projects via a disciplined value-based approach
- Led planning and execution of multiple pilot manufacturing projects and prototype demonstration articles including design, fabrication, and assembly of full-scale airplane fuselages and wings for Boeing's next family of aircraft
- Developed new technologies and IP in composites manufacturing, automation/robotics, and assembly/modularity (~25 inventions, ~15M/unit savings vs. business case)



Left – Boeing factory implementation of wing fab/assy technology, Center – Student project at Olin College for creating aircraft wire bundles, Right – example of enhanced airplane livery enabled by developed inkjet printing technology

2015-2018

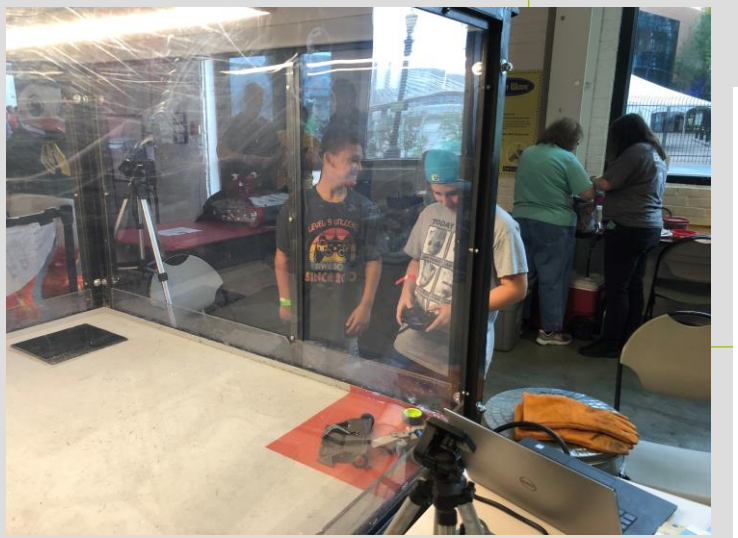
BeerandBots.com

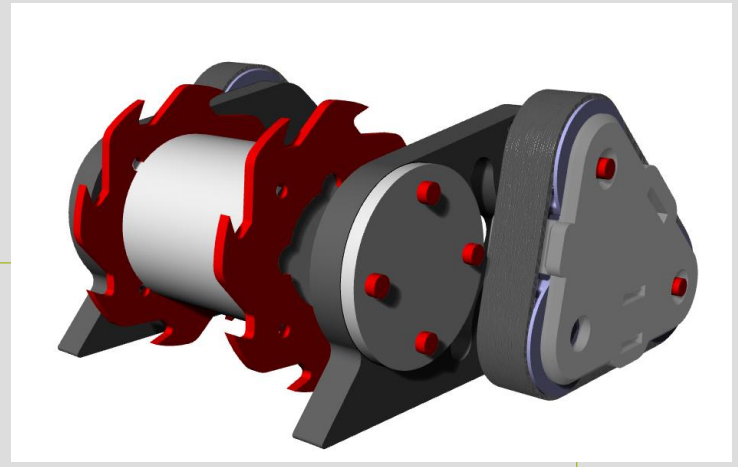


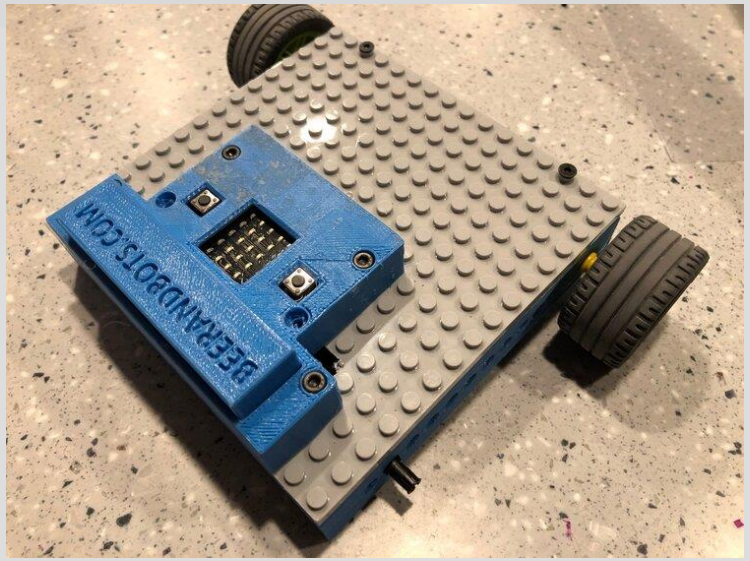
Owner

Beerandbots.com

- Hosted “Battlebots” style robot fighting events at Seattle-area breweries (limited to 1lb 3D printed bots)
- Built LEGO compatible robots with “Micro:Bit” microcontrollers (STEM-friendly drag-and-drop coding) for kid’s events







Left – towable/trailer-based arena at Oregon Museum of Science & Industry, Center – example of 1 lb bot for competition, Right – “brixbot” for STEM events

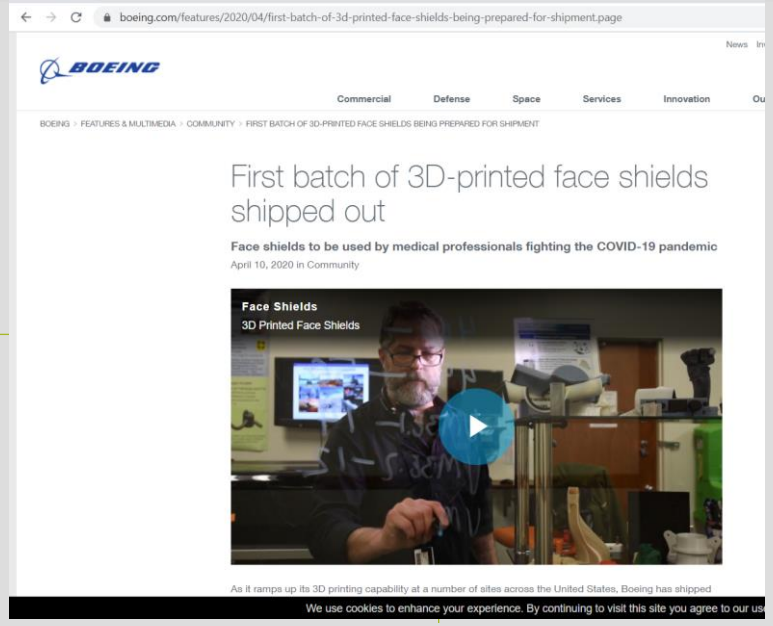
2018-Current

Boeing Additive Manufacturing

Sr Operations Leader –

Boeing Additive Manufacturing

- Established Boeing's first industrial 3D Printing/Additive Manufacturing factory in Auburn,
- Washington with capabilities in metal, polymer, and large volume (20+ feet) printing technology
- Responsible for all operations staffing, initial facility design, production system planning for
- 150K sq ft facility and direct team of ~30 + support and maintenance staff
- Fulfilled ~500 unique orders of printed parts and production tools between Feb 2019 (first production employee start date) and 2019 EOY
- Developed and implemented enterprise strategies for 3D printing, including facility safety SOPs, staffing, and IIOT/Digital Thread



Left – LSAM (Large-Scale Additive Manufacturing) machine at Boeing producing tooling, Center – Article about early COVID-PPE development efforts in collaboration with Design That Matters, Right – First metal additive part on Boeing's commercial airplane fleet

2018-2020

AMPD.CAMP

Owner

AMPD.CAMP

- Started RV company with long term goal of developing modular electrical systems for RVs, over-the-road trucks, and other vehicles (solar, power management, electric vehicle infrastructure)
- Initially focusing on ambulance to RV conversions

Left-to-Right – Renderings of Ambulance to RV conversion, Seattle FD ambulance pre-conversion

2020-Current