
FORMAL EDUCATION

Doctor of Philosophy (Ph.D.) School of Biomedical Engineering Colorado State University, Fort Collins, CO	2015
Bachelor of Science (B.S.) Department of Mechanical Engineering Trine University, Angola, IN	2009

TEACHING EXPERIENCE

Instructor Department of Mechanical Engineering, Colorado State University, Fort Collins, CO Courses: <i>Engineering Design II MECH202</i> (Fall 2016, Class size: 100; Spring 2017) <i>Machine Design MECH 325</i> (Fall 2016, Class size: 92) <i>Dynamics of Machinery MECH324</i> (Summer 2016/2017, Class size: 19, Average Instructor Rating: 5.00/5.00) <i>Introduction to Engineering Experimentation MECH231</i> (Spring 2016, Class size: 139, Average Instructor Rating: 4.83/5.00; Summer 2016, Class size: 29, Average Instructor Rating: 4.96/5.00; Fall 2016, Class size: 119) <i>Problem Based Learning in Biomedical Engineering BIOM300</i> (Spring 2016/2017, Class size: 71, Average Instructor Rating: 4.80/5.00)	2015-Present
Senior Design Faculty Advisor Department of Mechanical Engineering, Colorado State University, Fort Collins, CO Project: Design and creation of an electromechanical material testing machine	2016-2017
Guest Lecturer Department of Mechanical Engineering, Colorado State University, Fort Collins, CO <i>Machine Design MECH325</i> <ul style="list-style-type: none">• Taught 15 classes over two semesters <i>Bioengineering BIOM570</i> <ul style="list-style-type: none">• Taught 3 classes on biomechanics <i>Musculoskeletal Biosolid Mechanics MECH580</i> <ul style="list-style-type: none">• Taught 3 laboratory lectures on finite element analysis	2013-2016
Graduate Teaching Assistant School of Biomedical Engineering, Colorado State University, Fort Collins, CO Courses: <i>Human Physiology BIOM 480</i> (Fall 2011 – Spring 2012) <ul style="list-style-type: none">• Designed and implemented a new, online, graduate-level human physiology course• Organized course teaching materials and created assignments and exams	2011-2012

RESEARCH EXPERIENCE

Graduate Research Assistant Orthopaedic Bioengineering Research Laboratory, Colorado State University, Fort Collins, CO <i>Personal projects:</i> <ul style="list-style-type: none">• Developed simulation technique of microgravity unloading in a large animal model for NASA via <i>in vitro</i> and <i>in vivo</i> experiments• Worked collaboratively with orthopaedic surgeons to develop novel surgical technique for the implantation of external fixation hardware• Investigated bone fracture healing <i>in vivo</i> and implemented therapeutic countermeasures under simulated microgravity loading conditions• Managed collaborative group of over 20 members including surgeons, technicians, interns, and other students• Developed and validated several state-of-the-art high-fidelity finite element models using Abaqus and ProEngineer Software• Developed and patented two spinal implant devices through experimental and computational techniques <i>Collaborative projects:</i> <ul style="list-style-type: none">• Assisted with characterization experiments for a novel bio-microelectromechanical device to monitor bone fracture healing in a preclinical ovine model• Evaluated the mechanical behavior of numerous orthopaedic devices and products found in industry via preclinical ovine studies	2009-2015
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UNIVERSITY OUTREACH

Tau Beta Pi Faculty Advisor Colorado State University, Fort Collins, CO	2017-Present
Senior Undergraduate Honors Advisor Student: Eric Kaliamos Project: Design and creation of an electromechanical material testing machine	2016-2017
Graduate Affairs Committee Student Member School of Biomedical Engineering, Colorado State University, Fort Collins, CO	2014-2015
Graduate Student Showcase Faculty Judge Colorado State University, Fort Collins, CO	2015

PEER-REVIEWED PUBLICATIONS

1. **BC Gadomski**, KC McGilvray, JT Easley, RH Palmer, J Jiao, X Li, Y-X. Qin, CM Puttlitz. "Shock wave therapy and low-intensity pulsed ultrasound accelerate bone formation rates under simulated microgravity loading conditions." *J Orthopaed Res*, In Review.
2. **BC Gadomski**, SS Shetye, BJ Hindman, F Dexter, BG Santoni, MM Todd, VC Traynelis, RP From, RB Fontes, CM Puttlitz. "Intubation biomechanics: validation of a finite element model of cervical spine motion during endotracheal intubation in intact and injured conditions." *J Neurosurg Spine*, Accepted 5-2017.
3. **BC Gadomski**, ZF Lerner, RC Browning, JT Easley, RH Palmer, CM Puttlitz. "Computational characterization of fracture healing under reduced gravity loading conditions." *JOR* 34, 2016.
4. **BC Gadomski**, KC McGilvray, JT Easley, RH Palmer, EJ Ehrhart, KK Haussler, RC Browning, B Santoni, CM Puttlitz. "Partial Gravity Unloading Inhibits Bone Healing Responses in Haversian Bone Systems." *J Biomech* 47, 2014.
5. **BC Gadomski**, KC McGilvray, JT Easley, RH Palmer, EJ Ehrhart, KK Haussler, RC Browning, B Santoni, CM Puttlitz. "An *in vivo* ovine model of bone tissue alterations in simulated microgravity conditions." *J Biomech* Engr 136, 2014.
6. ZF Lerner, **BC Gadomski**, A Ipson, KK Haussler, CM Puttlitz, RC Browning. "Modulating tibiofemoral contact force in the sheep hindlimb via treadmill walking: Predictions from an OpenSim musculoskeletal model." *J Orthopaed Res*, 2015.
7. UM Ayturk, **B Gadomski**, D Schuldt, V Patel, CM Puttlitz. "Modeling degenerative disk disease in the lumbar spine: a combined experimental, constitutive, and computational approach." *J Biomech* Engr 134, 2012.
8. D Woldtvedt, W Womack, **B Gadomski**, D Schuldt, CM Puttlitz. "Finite element lumbar spine facet contact parameter predictions are affected by the cartilage thickness distribution and initial joint gap size." *J Biomech* Engr 133, 2011.

REFEREED CONFERENCE PROCEEDINGS

† indicates oral podium presentation

1. †**BC Gadomski**, BJ Hindman, BG Santoni, MM Todd, VC Traynelis, RB Fontes, CM Puttlitz. "Peak Cervical Spinal Cord Strain Predictions are Affected by the Point of Force Application during Direct Laryngoscopy." International Anesthesia Research Society; Washington DC, 2017. – Kosaka Best of Meeting Top Finalist in Clinical Research Award
2. **BC Gadomski**, SS Shetye, BJ Hindman, BG Santoni, MM Todd, VC Traynelis, RB Fontes, CM Puttlitz. "The effect of cervical spine injury on intervertebral kinetics and spinal cord strain during direct laryngoscopy: A computation investigation." 61st Annual Meeting of the Orthopedic Research Society; San Diego, CA, 2016.
3. **BC Gadomski**, SS Shetye, BJ Hindman, BG Santoni, MM Todd, VC Traynelis, RB Fontes, CM Puttlitz. "Computational modeling of direct laryngoscopy and the effect of cervical spine injury on intervertebral kinetics." International Anesthesiology Research Society; San Francisco, CA, 2016.
4. †**BC Gadomski**, Y-X. Qin, J. Jiao, KC McGilvray, JT Easley, RH Palmer, CM Puttlitz. "Shock wave therapy and low-intensity pulsed ultrasound accelerate bone formation rates under simulated microgravity conditions." NASA Human Research Program Investigators' Workshop; Galveston, TX, 2016.
5. **BC Gadomski**, ZF Lerner, RC Browning, CM Puttlitz. "A finite element investigation of fracture healing under simulated microgravity loading conditions." Summer Biomechanics, Bioengineering and Biotransport Conference; Snowbird, UT, 2015.
6. **BC Gadomski**, KC McGilvray, JT Easley, RH Palmer, D Ruehlman, M Roberts, CM Puttlitz. "Shock wave therapy does not enhance acute fracture strength but may accelerate formation rates under simulated microgravity conditions." NASA Human Research Program Investigators' Workshop; Galveston, TX, 2015.
7. **BC Gadomski**, ZF Lerner, RC Browning, CM Puttlitz. "Finite element modeling of the ovine hindlimb for the investigation of microgravity-related mechanobiological alterations." 60th Annual Meeting of the Orthopedic Research Society; Las Vegas, NV, 2015.
8. **BC Gadomski**, ZF Lerner, RC Browning, CM Puttlitz. "Development and validation of a finite element model of the ovine hindlimb for the investigation of microgravity loading on skeletal tissue healing." World Congress of Biomechanics; Boston, MA, 2014.
9. **BC Gadomski**, KC McGilvray, JT Easley, RH Palmer, CM Puttlitz. "Evaluation of Haversian bone fracture healing in simulated microgravity." NASA Human Research Program Investigators' Workshop; Galveston, TX, 2014.

10. †**BC Gadomski**, KC McGilvray, JT Easley, RH Palmer, CM Puttlitz. “Simulating microgravity in a large animal model.” ASME Summer Bioengineering Conference; Sunriver, OR, 2013.
11. **BC Gadomski**, CM Puttlitz. “Design of a dynamic stabilization device for the correction of the center of rotation in lumbar spine.” International Society for the Advancement of Spine Surgery; Vancouver, Canada, 2013.
12. †**BC Gadomski**, KC McGilvray, JT Easley, RH Palmer, CM Puttlitz. “Evaluation of a ground-based ovine model of simulated microgravity.” NASA Human Research Program Investigators’ Workshop; Galveston, TX, 2013.
13. **BC Gadomski**, CM Puttlitz. “Experimental evaluations of intervertebral disc mechanics following posterolateral fusion are dependent on testing protocol.” 58th Annual Meeting of the Orthopedic Research Society; San Francisco, CA, 2012.
14. **BC Gadomski**, KC McGilvray, JT Easley, RH Palmer, CM Puttlitz. “An ovine model of simulated microgravity.” NASA Human Research Program Investigators’ Workshop; Houston, TX, 2012.
15. **B Gadomski**, J Rasmussen, CM Puttlitz. “Implementation of physiological muscle loading in a finite element model of the human lumbar spine.” 57th Annual Meeting of the Orthopaedic Research Society; Long Beach, CA, 2011.
16. †**BC Gadomski**, J Rasmussen, CM Puttlitz. “The effect of muscle loading on internal mechanical parameters of the lumbar spine: a finite element study.” ASME Summer Bioengineering Conference; Farmington, PA, 2011.
17. †**BC Gadomski**, J Rasmussen, P Galibarov, CM Puttlitz. “The effect of coupled motions and lifting tasks on human lumbar nucleus pressures and annulus fibrosis stresses in a muscle-loaded finite element model.” International Society for Biomechanics; Brussels, Belgium, 2011.

PATENTS

1. CM Puttlitz, **BC Gadomski**. “Interspinous spacer devices for dynamic stabilization of degraded spinal segments.” United States Patent US 8,945,185 B2; Issued February 2015.
2. CM Puttlitz, **BC Gadomski**. “Pedicule screw assembly and dynamic spinal stabilization devices incorporating the pedicle screw assembly.” United States Patent US 9,226,779 B2; Issued January 2016.
3. CM Puttlitz, **BC Gadomski**, “Interspinous spacer devices for dynamic stabilization of degraded spinal segments.” United States Patent US 9,603,633 B2; Issued March 2017.

HONORS AND AWARDS

- Kosaka Best of Meeting Top Finalist in Clinical Research, International Anesthesia Research Society, 2017
- Colorado State University Engineering College Council Best Professor Award Nomination, 2015
- Colorado State University College of Engineering Patent Award, 2015
- 2nd Place AG, USA Duathlon National Championship, 2015
- 1st Place Winner, ASME Summer Bioengineering Conference Ph.D. Competition, 2013
- Colorado State University School of Biomedical Engineering Travel Award, 2013
- Colorado State University Graduate School Travel Award, 2013
- 4th Place AG, USA Duathlon National Championship, 2013
- Trine University Renaissance Scholar Award, 2009
- Engineer in Training (E.I.T.) certification, 2009
- Tau Beta Pi Engineering Honor Society; Indiana Epsilon Chapter President, 2008; Colorado Delta Chapter Faculty Advisor, 2017-Present
- Pi Tau Sigma, National Mechanical Engineering Honor Society, 2008
- FEF Robert V. Wolf Memorial Scholarship Award, 2008

SAMPLE OF STUDENT COURSE EVALUATION COMMENTS

- “Easily one of my favorite courses I’ve taken at CSU. The lab actually corresponded to what we were learning in class, which is a nice change from other classes I’ve taken. The lectures were engaging and effective. I learned a lot and it was interesting! Thank you for a great course!”
- “Really enjoyed the way you taught this course. Hopefully I can have the pleasure of taking another class taught by you.”
- “You are by far the best professor I’ve had so far at CSU!”
- “Dr. Gadomski is a terrific professor because he truly cares that each student understands the material and can apply it to real-life engineering situations. He is also incredibly fair to the students as a whole by understanding how busy we are and what we’ll actually need to know for our future careers. Plus he is really funny.”
- “Dr. Gadomski is wonderful – he is so helpful, cares about the students, and wants everyone to succeed. He is a great lecturer and makes sure that everyone understands the material being taught before moving on.”
- “Great course. Good use of example to help understanding. Made everything simple enough, even hard concepts to understand.”

- “You are a great professor and I enjoyed your class.”
- “I loved how Dr. Gadomski came to our lab. In a class this big it was really cool and unusual to have a professor that gets to know as many people as he can on a personal level. It also made me feel like I had to do better than if he didn’t know me personally. I’m looking forward to having another class with you next semester!”
- “I enjoyed having you as a professor. Definitely one of the more engaging and enthusiastic professors I’ve had.”
- “Awesome teacher! Lots of office hours, went above and beyond in practical application and more knowledge when approached. Never missed a class and it was @ 8am.”
- “Dr. Ben is a very smart and passionate professor. His class was very informative.”
- “You da bombski, Gadomski!! Thanks for a great semester. I learned a lot and had a great time listening to you lecture.”
- “Great teacher, I learned a lot from class lectures and the lab. Hope to have Dr. Gadomski in future classes.”
- “Dr. Gadomski, you did an extremely great job teaching material. You answered questions with ease and made test questions fair and hard. I feel I learned a lot from you this semester and appreciate you as my teacher. Thanks for everything!”
- “I greatly enjoyed taking this course. Dr. Gadomski’s teaching style and approach actually made me want to be engaged during class, which is rare. I feel like he was quite approachable, and was able to make a connection with the students that made it feel less like “class”. Excellent job!”
- “You have been my favorite professor thus far in my time at CSU. Your approachability, enthusiasm, class engagement, and organization turned a seemingly dull class into my favorite for the semester. Keep up the good work.”
- “Thank you so much! Your teaching style is excellent and you relate well to the students which is very important. For once I don’t have any suggestions. Thanks for a great semester!”
- “I thoroughly enjoyed this course, and I wish I had more classes like it. I have disliked other courses in the curriculum that held a heavy emphasis on book learning, as opposed to learning through experience. Dr. Gadomski was also a really great facilitator in and out of lab, and seemed to genuinely care about our improving, rather than attempting to fail us. Overall, this has been my favorite class thus far.”
- “This is the best course I have taken at CSU. The open-ended problem solving makes for a great way of learning. It’s good to have this course to mix with purely technical work. Gadomski was great, easily the best prof I have had at CSU.”
- “This lab is very useful and very necessary in our BIOM program. We learned so much about how to professionally write lab reports and how to set up an effective experiment. I had a good time and really enjoyed the lab. Also, Dr. Gadomski is a really great professor.”
- “This course is a great introduction to team work and tackling research problems where there may not be a basis to start from. The structure of “problem based learning” ie figure it out and make your own study is an amazing introduction to what will be expected of engineers in their careers. This class should be taught early sophomore year to see what biomedical engineering is. Gadomski provided extensive guidance and feedback over all aspects of the course and made the learning environment great.”
- “Overall, I really enjoyed this course and Dr. Gadomski and I hope I get to take a class with him in the future.”
- “Great professor. Very involved with the students and helps develop the students’ skills very well through promoting critical thinking to answer questions. The class structure was great. By working with groups to design an experiment and follow through with the testing, analysis, and report, so much is learned about the research process. It is also good for learning how to work in teams and resolve conflict. Overall, very good course.”
- “Love ya, G. Class was awesome. Loved the way it was set up. Keep it 100, G!”
- “I really liked this course. I found it very useful and spoke about it in nearly all of my interviews this semester.”
- “Gadomski was present for nearly all lab sections which was extremely helpful. He clearly cares a great deal for his students’ learning and was a very good instructor.”
- “This course was one of my absolute favorites. Dr. Gadomski was a wonderful instructor; he both made me more interested in research and helped make me better at it. I can tell that this course will give me the edge over all non-biomedical engineers come senior design. All of my mechanical engineering friends that didn’t get the experience I did here told me that they are unconfident of their abilities come senior design. I know this course has given me the skill set to be successful in senior design.”