



Dr. Cynthia Bir
Nathan Dau
Charlene Brain
Donald Sherman
Richard Bolander
Gregory Crawford
Erin Hanlon
Brian McKay
Sarah Stojsh
Matthew McCann
Ashraf Aboukhodr
Jacob Mack
Joel Patterson

Personnel ► [Dr. Cynthia Bir](#)

Quick Links ▼

Cynthia Bir, Ph.D.
Associate Professor

- E-mail: cbir@wayne.edu
- Tel: 313-577-3830
- Education:
 - B.S. in Nursing, Nazareth College, Kalamazoo, MI, 1990
 - M.S. in Bioengineering, University of Michigan, Ann Arbor, MI, 1992
 - M.S. in Mechanical Engineering, Wayne State University, Detroit, MI, 1999
 - Ph.D. in Biomedical Engineering, Wayne State University, Detroit, MI, 2000
- Experience:
 - Assistant Professor, Research Wayne State University, Detroit, MI, 2000-2001
 - Assistant Professor, Department of Biomedical Engineering, Wayne State University, Detroit, MI, 2001-2005
 - Associate Chair, Department of Biomedical Engineering, Wayne State University, Detroit, MI, 2004-2006
 - Associate Professor, Department of Biomedical Engineering, Wayne State University, Detroit, MI 2005-Present
- Honors and awards:
 - Outstanding Junior Faculty, Academy of Scholars, Wayne State University, 2005
 - Outstanding Faculty Service Award, College of Engineering, Wayne State University, 2003, 2005
 - Tau Beta Pi Engineering Honor Society, 1999
 - Sigma Theta Tau Nursing Honor Society, 1997
 - Aiming for Excellence in Nursing Award, Nazareth College, 1990
 - Who's Who Among Collegiate Nursing Students, 1990
 - Borgess Service League Scholar, 1989-90
- Selected Publications:
 - [Esquivel, A, Dawe, E, Sala-Mercado, J, Hammond, R, Bir, C, The Physiologic Effects of the Stinger Conducted Electrical Weapon in Swine, *Annals of Emer Med*, 2007 \(doi: 10.1016/j.annemergmed.2006.09.019\)](#)
 - [Wilhelm, M, Bir, C, Injuries to Law Enforcement Officers: The Backface Signature Injury, *Forensic Sci Int*, 2007](#)
 - [Pellman, E, Viano, D, Withnall, C, Shewchenko, N, Bir, C, Halstead, D, Concussion in Professional Football: Helmet Testing to Assess Impact Performance--Part 11, *Neurosurgery*, 58\(1\), 2006, 78-96](#)
 - [Bir, C, Stewart, S, Wilhelm, M, Skin Penetration Assessment of Less Lethal Kinetic Energy Munitions, *J of Forensic Science*, 50\(6\), 2005, 1426-1429](#)
 - [Viano, D, Casson, I, Pellman, E, Bir, C, Zhang, L, Sherman, D, Boitano, M, Concussion in Professional Football: Comparison with Boxing Head Impacts--Part 10, *Neurosurgery*, 57\(6\), 2005, 1154-1172](#)
 - [Walilko, T, Viano, D, Bir, C, Biomechanics of the Head for Olympic Boxer Punches to the Face, *Br J Sports Med*, 39\(10\), 2005, 710-719](#)
 - [Walilko, T, Bir, C, Godwin, W, King, A, Relationship between](#)



- Temporomandibular Joint Dynamics and Mouth Guards: Feasibility of a test methodology, *Dental Traumatol*, 20(5), 2004, 255-260
- Bir, C, Viano, D, Design and Injury Assessment Criteria for Blunt Ballistic Impacts, *J of Trauma*, 57(6), 2004, 1218-1224
 - Bir, C, Viano, D, King, A, Development of Biomechanical Response Corridors of the Thorax to Blunt Ballistic Impacts, *J Biomech*, 37(1), 2004, 73-79
 - Viano, D, Bir, C, Walilko, T, Sherman, D, Ballistic Impact of the Forehead, Zygoma, and Mandible: Comparison of Human and Frangible Dummy Face Biomechanics, *J of Trauma*, 56(6), 2004, 1305 - 1311
 - Janda, D, Bir, C, Cheney, A, An Evaluation of the Cumulative Concussive Effect of Soccer Heading in the Youth Population, *Int J of Inj Control and Safety Prom*, 9(1), 2002, 25-31
 - Atkinson, P, Hariharan, P, Mari-Gowda, S, Telehowski, P, Martin, S, Van Hoof, J, Bir, C, Atkinson, T An Under-hand Steering Wheel Grasp Produces Significant Injury Risk to the Upper Extremity During Airbag Deployment, *Annual Proc Assoc Adv Automot Med*, 46, 2002, 45-62
 - Janda, D, Bir, C, Kedroske, B, A Comparison of Standard vs. Breakaway Bases: An Analysis of a Preventative Intervention for Softball and Baseball Foot and Ankle Injuries, *Foot Ankle Int*, 22(10), 2001, 810-816
 - Viano, D, Bir, C, Janda, D, Cheney, A, Prevention of Commotio Cordis in Baseball: An Evaluation of Chest Protectors, *J of Trauma* 49(12), 2000, 1023-1028
 - Bir, C, Viano, D, Biomechanical Predictor of Commotio Cordis in High-Speed Chest Impact, *J of Trauma* 47(3), 1999, 468-473
 - Armstrong, T, Bir, C, Foulke, J, Martin, B, Finsen, L, Sjogaard, G, Muscle Response to Simulated Torque Reactions of Hand-held Power Tools, *Ergonomics* 42(1), 1999, 146-159
 - Janda, D, Bir, C, Viano, D, Cassatta, S, Blunt Chest Impacts: Assessing the Relative Risk of Fatal Cardiac Injury from Various Baseballs, *J of Trauma* 44 (2), 1998, 298-303
 - Werner, R, Armstrong, T, Bir, C, Aylard, M, Intracarpal Canal Pressures: The Role of Finger, Hand, Wrist, and Forearm Position, *Clin Biomech*, 12(1), 1997, 44-51
 - Janda, D, Bir, C, Hensinger, R, Wild, B, Olsen, S, Goal Post Injuries in Soccer - A Laboratory and Field Testing Analysis of a Preventative Intervention, *Am J of Sports Med*, 23(3), 1995, 340-344
 - Bir, C, Cassatta, S, Janda, D, An Analysis and Comparison of Soccer Shin Guards, *Clin J of Sports Med*, 5(2), 1995, 95-99
 - Werner, R, Bir, C, Armstrong, T, Reverse Phalen's Maneuver as an Aid in Diagnosing Carpal Tunnel Syndrome, *Archives of Phys Medand Rehab*, 75, 1994, 783-786