



Exponent[®]
Engineering & Scientific Consulting

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Professional Profile

Dr. Campolettano addresses issues involving the biomechanics of human injury. Specifically, he analyzes the biomechanics and injury mechanisms associated with a variety of scenarios including motor vehicle collisions and occupational accidents. Dr. Campolettano specializes in traumatic brain injury, including concussion, and he has evaluated the effectiveness of helmets and other protective headgear in mitigating head injuries. He has additional experience in the evaluation of the injury potential of unmanned aerial systems (drones).

Prior to joining Exponent, Dr. Campolettano completed his Ph.D. work in the Center for Injury Biomechanics at Virginia Tech. His dissertation focused on the development of a concussion risk function for youth athletes, the evaluation of youth football helmet protection in the context of youth football players, and the development of postural control assessments for use in the return to learn/play protocols for youth athletes who may sustain concussions. During his graduate studies, Dr. Campolettano served as the primary project manager for large-scale, multi-institutional research studies funded by the National Institutes of Health, National Collegiate Athletic Association, and Department of Defense. Additionally, he developed testing procedures to assess the injury potential associated with impacts from unmanned aerial systems and presented the results of this work to policymakers. He also assessed the injury potential associated with a variety of sports helmets/headgear and consumer products.

Academic Credentials & Professional Honors

Ph.D., Biomedical Engineering, Virginia Polytechnic Institute and State University, 2019

M.S., Biomedical Engineering, Virginia Polytechnic Institute and State University, 2017

B.S., Mechanical Engineering, Lafayette College, 2015

2020 Athanasiou ABME Student Award

2018 Athanasiou ABME Student Award

2018 ABME Most Downloaded Paper Award

2018 Rocky Mountain Bioengineering Symposium President's Award

2017 Virginia Tech College of Engineering Top Master's Student

2017 Virginia Tech 1st place M.S. Paul E. Torgersen Graduate Research Excellence Award

2016 Summer Biomechanics, Bioengineering, and Biotransport Conference Master's Student Paper Competition Award Recipient

2016 Virginia Tech 1st place M.S. Paul E. Torgersen Graduate Research Excellence Award

2015-2016 Virginia Tech Pratt Fellowship

Lafayette College Marquis Scholar

Prior Experience

Graduate Research Assistant, Virginia Tech/Wake Forest Center for Injury Biomechanics, 2015-2019

Professional Affiliations

Biomedical Engineering Society

Tau Beta Pi Engineering Honor Society

Publications

Rodowicz K, Campolettano ET, Bruno AG, Schimpf N, Rogers MW. Evaluation of the effect of a rear operator guard on the overall safety for operators of stand-up lift trucks. *ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part B: Mechanical Engineering*. 2021

Campolettano ET, Madigan ML, Rowson S. Reliability of center of pressure-based measures during dual-task postural control testing in a youth population. *International Journal of Sports Physical Therapy*, 15(6), 2020.

Campolettano ET, Rowson S. Relating on-field youth football head impacts to pneumatic ram laboratory testing procedures. *Proceedings of the Institution of Mechanical Engineers, Part P: Journal of Sports Engineering and Technology*. 2020.

Campolettano ET, Gellner RA, Sproule DW, Begonia MT, Rowson S. Quantifying youth football helmet performance: assessing linear and rotational head acceleration. *Annals of biomedical engineering*, 1-11, 2020

Rowson S, Campolettano ET, Duma SM, Stemper B, Shah A, Harezlak J, Rigger L, Mihalik JP, Brooks A, Cameron KL, Svoboda SJ, Houston MN, McAllister T, Broglio S, McCrea M. Concussion risk between individual football players: survival analysis of recurrent events and non-events. *Annals of biomedical engineering*, 1-13, 2020.

Gellner RA, Campolettano ET, Rowson S. Does tackling form affect head acceleration in youth football players?. *Proceedings of the Institution of Mechanical Engineers, Part P: Journal of Sports Engineering and Technology*. 2020.

Maerlender A, Smith E, Brolinson PG, Urban J, Rowson S, Ajamil A, Campolettano ET, Gellner RA, Bellamkonda S, Kelley ME, Jones D, Powers A, Beckwith J, Crisco JJ, Stitzel J, Duma SM, Greenwald RM. Psychometric properties of the standardized assessment of concussion in youth football: Validity, reliability, and demographic factors. *Applied Neuropsychology: Child*. pp.1-7, 2020.

Maerlender A, Smith E, Brolinson PG, Crisco JJ, Urban J, Ajamil A, Rowson S, Campolettano ET, Gellner RA, Bellamkonda S, Kieffer E, Kelley ME, Jones D, Powers A, Beckwith J, Stitzel J, Greenwald RM, Duma SM. Neuropsychological change after a single season of head impact exposure in youth football.

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Alois J, Bellamkonda S, Campolettano ET, Gellner RA, Genemaras A, Beckwith JG, Greenwald RM, Smith E, Rowson S, Duma SM, Crisco JJ. Do American youth football players intentionally use their heads for high-magnitude impacts?. *The American Journal of Sports Medicine*, 47(14), pp.3498-3504, 2019.

Campolettano ET. Quantifying postural control, concussion risk, and helmet performance in youth football. Doctor of Philosophy Dissertation, Virginia Polytechnic Institute and State University, 2019.

Rowson S, Campolettano ET, Duma SM, Stemper B, Shah A, Harezlak J, Riggen L, Mihalik JP, Guskiewicz KM, Giza C, Brooks A, Cameron K, McAllister T, Broglio SP, McCrea M. Accounting for variance in concussion tolerance between individuals: comparing head accelerations between concussed and physically matched control subjects. *Annals of Biomedical Engineering*, 1-9, 2019.

Campolettano ET, Rowson S, Duma SM, Stemper B, Shah A, Harezlak J, Riggen LD, Mihalik J, Brooks A, Cameron K, Giza CC, McAllister T, Broglio SP, McCrea M. Factors affecting head impact exposure in college football practices: a multi-institutional study. *Annals of Biomedical Engineering*, 1-8, 2019.

Campolettano ET, Gellner RA, Egeli E, Rowson S. The effect of coaching and player position on head impact exposure in youth football players, *Biomedical Sciences Instrumentation: RMBS Special Issue*, 55(2):212-217, Milwaukee, WI, 2019.

Gellner RA, Campolettano ET, Smith EP, Rowson S. Are specific players more likely to be involved in high-magnitude head impacts in youth football?. *Journal of Neurosurgery: Pediatrics*, 47-53, 2019.

Campolettano ET, Gellner RA, Rowson S. Relationship between impact velocity and resulting head accelerations during head impacts in youth football, *Proceedings of the International Research Council on Biomechanics of Injury (IRCOBI) Conference*, Athens, Greece, 2018.

Campolettano ET, Rowson S. Effects of a season of youth football on static postural control. *Biomedical Sciences Instrumentation: RMBS Special Issue*, 54(1):1-8, Fargo, ND, 2018.

Campolettano ET, Gellner RA, Rowson S. Assessing static and dynamic postural control in a healthy population. *Biomedical Sciences Instrumentation: RMBS Special Issue*, 54(1):24-31, Fargo, ND, 2018.

Gellner RA, Campolettano ET, Rowson S. Association between tackling technique and head acceleration magnitude in youth football players. *Biomedical Sciences Instrumentation: RMBS Special Issue*, 54(1):39-45, Fargo, ND, 2018.

Bellamkonda S, Woodward SJ, Campolettano ET, Gellner R, Kelley ME, Jones DA, Genemaras A, Beckwith JG, Greenwald RM, Maerlender AC, Rowson S, Duma SM, Urban JE, Stitzel JD, Crisco JJ. Head impact exposure in practices correlates with exposure in games for youth football players. *Journal of Applied Biomechanics*, 34(5), 354-360, 2018.

Campolettano ET, Brolinson G, Rowson S. Postural control and head impact exposure in youth football players: comparison of the Balance Error Scoring System and a Force Plate Protocol. *Journal of Applied Biomechanics*, 34(2), 127-133, 2017.

Campolettano ET, Bland ML, Gellner RA, Sproule DW, Rowson B, Tyson AM, Duma SM, Rowson S.

Ranges of injury risk associated with impact from unmanned aircraft systems. *Annals of Biomedical Engineering*, 45(12), 2733-2741, 2017.

Campolettano ET, Gellner RA, Rowson S. High-magnitude head impact exposure in youth football. *Journal of Neurosurgery: Pediatrics*, 20(6), 604-612, 2017.

Sproule DW, Campolettano ET, Rowson S. Football helmet impact standards in relation to on-field impacts. *Proceedings of the Institution of Mechanical Engineers, Part P: Journal of Sports Engineering and Technology*, 231(4), 317-323, 2017.

Campolettano ET, Rowson S, Duma SM. Drill-specific head impact exposure in youth football practice. *Journal of Neurosurgery: Pediatrics*, 18(5), 536-541, 2016.

Rowson S, Bland ML, Campolettano ET, Press JN, Rowson B, Smith JA, Sproule DW, Tyson AM, Duma SM. Biomechanical perspectives on concussion in sport. *Sports Medicine and Arthroscopy Review*, 24(3), 100-107, 2016.

Presentations

Campolettano ET. Development of a concussion risk function for a youth population using head linear and rotational acceleration. 2020 BMES Annual Meeting. October 2020.

Campolettano ET. Development of a concussion risk function for a youth population using head linear and rotational acceleration. 2019 Virginia Tech – Wake Forest SBES Symposium. Blacksburg, Virginia, May 2019.

Campolettano ET, Gellner RA, Egeli E, Rowson S. The effect of coaching and player position on head impact exposure in youth football players. 56th Annual Rocky Mountain Bioengineering Symposium. Milwaukee, Wisconsin, April 2019.

Campolettano ET, Madigan ML, Rowson S. Postural control during dual task interference in a youth population. 2018 BMES Annual Meeting. Atlanta, Georgia, October 2018.

Campolettano ET, Gellner RA, Rowson S. Relationship between impact velocity and resulting head accelerations during head impacts in youth football. 2018 BMES Annual Meeting. Atlanta, Georgia, October 2018.

Campolettano ET, Bland ML, Gellner RA, Sproule DW, Rowson B, Tyson AM, Duma SM, Rowson S. Quantifying the range of injury risk to the head and neck from Unmanned Aircraft Systems. 2018 BMES Annual Meeting. Atlanta, Georgia, October 2018.

Campolettano ET, Gellner RA, Rowson S. Relationship between impact velocity and resulting head accelerations during head impacts in youth football. 2018 International Research Council on Biomechanics of Injury (IRCOBI) Conference. Athens, Greece, September 2018.

Campolettano ET, Rowson S, Duma SM, Stemper B, Shah A, Harezlak J, Riggen LD, Mihalik J, Brooks A, Cameron K, Giza CC, McAllister T, Broglio SP, McCrea M. Factors affecting head impact exposure in collegiate football players. 2018 World Congress of Biomechanics. Dublin, Ireland, July 2018.

Campolettano ET, Rowson S. Effects of a season of youth football on static postural control. 2018 Rocky Mountain Bioengineering Symposium. Fargo, North Dakota, April 2018.

Campolettano ET, Gellner RA, Rowson S. Assessing static and dynamic postural control in a healthy population. 2018 Rocky Mountain Bioengineering Symposium. Fargo, North Dakota, April 2018.

Campolettano ET. 2018 Concussion: Medical, Scientific, and Societal Perspectives course lecture: Biomechanical basis of pediatric mTBI due to sports-related concussion, January 2018.

Campolettano ET. Youth Football Helmets. 2017 Virginia Tech Helmet Ratings Symposium. Atlanta, Georgia, November 2017.

Campolettano ET, Bland ML, Gellner RA, Sproule DW, Rowson B, Tyson AM, Duma SM, Rowson S. Quantifying the range of injury risk to the head and neck from Unmanned Aircraft Systems. 2017 BMES Annual Meeting. Phoenix, Arizona, October 2017.

Campolettano ET, Gellner RA, Rowson S. High-magnitude head impact exposure in youth football. 2017 BMES Annual Meeting. Phoenix, Arizona, October 2017.

Campolettano ET, Gellner RA, Rowson S. High-magnitude head impact exposure in youth football. 2017 Summer Biomechanics, Bioengineering, and Biotransport Conference. Tucson, Arizona, June 2017.

Campolettano ET, Rowson S, Duma SM. Drill-specific head impact exposure in youth football practice. 2016 BMES Annual Meeting. Minneapolis, Minnesota, October 2016.

Campolettano ET, Rowson S, Duma SM. Drill-specific head impact exposure in youth football practice. 2016 Summer Biomechanics, Bioengineering, and Biotransport Conference. National Harbor, Maryland, June 2016.

Campolettano ET, Croft A, Fasano K, Hodge S, Myers K, Pinkard B, Ross J, Scoular A, Todd TS, Brown AA. Design of a low-cost haptic assistive handwriting device. 2015 Summer Biomechanics, Bioengineering, and Biotransport Conference. Snowbird Resort, Utah, June 2015.

Peer Reviewer

Annals of Biomedical Engineering

Biomedical Sciences Instrumentation

Journal of Applied Biomechanics

Journal of Biomechanical Engineering

Journal of Testing and Evaluation

The Physician and Sportsmedicine

Unmanned Systems