CURRICULUM VITAE
DAVID E. RAYMOND

EDUCATION

2008	PHD	WAYNE STATE UNIVERSITY Biomedical Engineering Detroit, Michigan
2001	MS	WAYNE STATE UNIVERSITY Biomedical Engineering Detroit, Michigan
1998	BS	MICHIGAN STATE UNIVERSITY Engineering Mechanics *Option*: Biomedical Engineering East Lansing, Michigan

LICENSURE

Registered Professional Engineer (Mechanical) – State of California #M39346

PROFESSIONAL EXPERIENCE

2011 to Date	California State University, Los Angeles *Professor* (8/2021-Present) *Interim Chair* (8/2022-8/2023) *Associate Chair* (8/2017-5/2018, 8/2023-Pres) *Associate Professor* (8/2016-8/2021) *Assistant Professor* (8/2011-8/2016) Department of Mechanical Engineering Los Angeles, California
2011 to Date	Trauma Biomechanics, LLC *Owner & Forensic Biomechanics Consultant* Redondo Beach, California
2002 to 2011	Vector Scientific, Inc. *Vice President* (2010-2011) *Director of Research* (2008-2010) *Senior Biomechanical Engineer* (2008-2011) *Biomedical Engineer* (2002-2008) Torrance, California
1999 to 2002	General Motors Corporation *Occupant Protection Engineer –Side Airbags* Safety and Crashworthiness Department Warren, Michigan
1998 to 1999	General Motors Corporation *Crashworthiness Development / Validation Engineer* Safety and Crashworthiness Department Flint, Michigan

TEACHING EXPERIENCE

Academic Year: 2011-2012		
ME 454	Fall	Special Topics (Biomechanical Eng.)
ME 210	Winter, Spring	Matrix Algebra for Engineers
ME 211	Winter, Spring	Probability and Statistics for Engineers
ME 497	Winter, Spring	Mechanical Engineering Senior Design
ME 201	Summer	Statics
Academic Year: 2012-2013		
ME 350	Fall	Biomechanics
ME 454	Winter	Special Topics (Impact Biomechanics)
ME 497	Fall, Winter, Spring	Mechanical Engineering Senior Design
ME 201	Fall, Spring	Statics
Academic Year: 2013-2014		
ENGR 454L	Fall	Seminars in Energy and Sustainability
ME 201	Winter, Spring	Statics
ME 354	Winter	Introduction to Biomedical Engineering
ME 350	Spring	Biomechanics
Academic Year: 2014-2015		
ME 201	Fall, Winter, Spring	Statics
ME 320	Fall	Dynamics
ME 350	Winter	Biomechanics
Academic Year: 2015-2016		
ME 201	Spring	Statics
ME 350	Spring	Biomechanics
ME 554	Fall	Special Topics (Forensic Engineering)
Academic Year: 2016-2017		
ME 2050	Fall	Strength of Materials I
ME 2010	Spring	Statics
ME 3040	Spring	Experimental Methods in Biomechanical Eng.
Academic Year: 2017-2018		
ME 3040	Fall, Spring	Experimental Methods in Biomechanical Eng.
ME 3801	Fall	Introduction to Biomedical Engineering
ME 4520	Spring	Impact Biomechanics
Academic Year: 2018-2019		
ME 3040	Fall, Spring	Experimental Methods for Engineers
ME 2801	Fall	Introduction to Biomedical Engineering
ME 4500	Fall	Biomechanics
ME 2050	Spring	Strength of Materials I
Academic Year: 2019-2020		
ME 3040	Fall, Spring	Experimental Methods for Engineers
ME 2801	Fall	Introduction to Biomedical Engineering
ME 2010	Fall, Spring	Statics
ME 3200	Spring	Dynamics
Academic Year: 2020-2021		
ME 3040	Fall, Spring	Experimental Methods for Engineers
ME 2801	Fall	Introduction to Biomedical Engineering
ME 2010	Fall, Spring	Statics
ME 3200	Fall	Dynamics
Academic Year: 2021-2022		
ME 3040	Fall	Experimental Methods for Engineers
ME 2010	Fall	Statics
ME 4500	Fall	Biomechanics
ME 4590	Spring	Rehabilitation Engineering
Academic Year: 2022-2023		
ME 2050	Fall	Strength of Materials I
Academic Year: 2023-2024		
ME 2050	Fall	Strength of Materials I
ME 4500	Fall	Biomechanics
ME 3200	Spring	Dynamics
ME 4590	Spring	Biomechanical Engineering Design

Academic Year: 2024-2025

ME 2010	Fall, Spring	Statics
ME 3200	Fall, Spring	Dynamics
ME 4500	Fall	Biomechanics of Human Movement
ME 4520	Spring	Impact Biomechanics

PROFESSIONAL MEMBERSHIPS

National Society of Professional Engineers (NSPE), 2020-Present
American Society for Engineering Education (ASEE), 2013-Present
American Academy of Forensic Sciences (AAFS), 2012-Present
American Society of Mechanical Engineers (ASME), 2009-Present
American Society of Biomechanics (ASB), 2009-Present
Society of Automotive Engineers (SAE), 1998-Present
Biomedical Engineering Society (BMES), 2007-2008, 2012-2014, 2016-Present
Pi Tau Sigma, 2012-Present
Order of the Engineer, 2012-Present

PROFESSIONAL SERVICE

Advisory Board Member – California Forensic Science Institute, 2014-Present
Associate Editor – SAE International Journal of Transportation Safety, 2015-Present
Society of Automotive Engineers Occupant Protection Committee, 2007-Present

REVIEWER (AD HOC)

Summer Biomechanics, Bioengineering, and Biotransport (SB^3) Conference
Computer Methods in Biomechanics and Biomedical Engineering
Rehabilitation Nursing Journal
Journal of Forensic Biomechanics
Journal of Forensic Sciences
Journal of Forensic Anthropology
Journal of Biomechanical Engineering
ASME Summer Bioengineering Conference
Annals for the Advancement of Automotive Medicine (AAAM)
Society of Automotive Engineers World Congress and Technical Paper Series
American Society of Engineering Education (ASEE)
Stapp Car Crash Conference

CONFERENCE ORGANIZING AND CHAIRING

Co-Organizer SAE World Congress 2007-2013, 2022
Technical sessions: Rear Impact, Rollover, and Side Impact Biomechanics

Co-Chair ASME International Mechanical Engineering Conference 2011
Session: Analysis of Trauma Due to Blast, Ballistics, and Impacts Symposium

RESEARCH FUNDING AND AWARDS

1. "Variation in Automotive Seat Stiffness Properties and the Effects on Lumbar Spine Response in Low- to Moderate Speed Rear-End Collisions," California State University, Los Angeles, Provost's Faculty Fellow Award, Aug/2024 to May/2025.

2. "Student Researcher Re-engagement: Investigating a Novel Helmet Design for the Prevention of Head-Neck Injury in Helmet-to-Helmet Football Impacts," California State University, Los Angeles, Provost's Student Research Fund, Aug/2021 to May/2022.

3. "HSI Implementation and Evaluation Project: Commitment to Learning Instilled by Mastery-Based Undergraduate Program (CLIMB-UP)," National Science Foundation, Oct/2021 to Sep/2024, Principal Investigator.

4. "Investigating a Novel Helmet Design for the Prevention of Head and Neck Injury in Helmet-to-Helmet Football Impacts," California State University, Los Angeles, Provost's Faculty Fellow Award, Aug/2021 to May/2022, Principal Investigator.

5. "An Introduction to Biomedical Engineering with Hands-On Design Projects," California State University Program for Education and Research in Biotechnology (CSUPERB), June/2021 to Nov/2022, Principal Investigator.

6. "Investigating the Effect of Head-Torso Coupling in Helmet-to-Helmet Football impacts," Impact Sports Company, LLC, Sep/2019 to Jan/2020, Principal Investigator.

7. "Lumbar Spine Loads in Rear-End Collisions: Effect of Crash Pulse, Seat Properties and Occupant Posture," California State University Los Angeles Research, Scholarship, and Creative Activity Program, June/2019 to May/2020, Principal Investigator.

8. "Investigating the Biomechanical Response of the Canine to Blunt Impact," Center for Pet Safety, August/2018 to January/2019, Principal Investigator.

9. "Forensic Science Student Association," California State University Los Angeles Instructionally-Related Activities (IRA) Program, August/2017 to May/2018, Principal Investigator.

10. "Forensic Science Student Association," California State University Los Angeles Instructionally-Related Activities (IRA) Program, August/2016 to May/2017, Principal Investigator.

11. "Evaluating Brain Response Under Helmeted Head Impacts," California State University Los Angeles Research, Scholarship, and Creative Activity Program, Nov/2015 to June/2016, Principle Investigator.

12. "Forensic Science Student Association," California State University Los Angeles Instructionally-Related Activities (IRA) Program, September/2015 to June/2016, Principal Investigator.

13. "Statics (Mechanical Engineering): Proven Course Redesign," California State University Chancellor's Office, July/2015 to June/2016, Principal Investigator.

14. "Forensic Science Student Association," California State University Los Angeles Instructionally-Related Activities (IRA) Program, September/2014 to June/2015, Principal Investigator.

15. "Development of the Next Generation Helmet Test Standard," California State University Los Angeles Research, Scholarship, and Creative Activity Program, Dec/2013 to June/2014, Principal Investigator.

16. "Development of a Source-Origin Revealing System for Crime Scene Analysis," California State University, Center for Teaching and Learning Undergraduate Research Mentoring Award, Nov/2013 to June/2014, Principal Investigator.

17. "Engineering Statics: Course Redesign for Active Learning," California State University STEM Academic Success Academy, Oct/2013 to June/2014, Principal Investigator.

18. "Society for the Advancement of Forensic Engineering," California State University Los Angeles Instructionally-Related Activities (IRA) Program, July/2013 to June/2014, Principal Investigator.

19. "Student Safety Technology Design Competition," California State University Los Angeles Instructionally-Related Activities (IRA) Program, July/2013 to June/2014, Principal Investigator.

20. "Development and Validation of a Subject-Specific Finite Element Model of the Human Skull for Blunt Impact Injury Assessment," California State University Los Angeles Research, Scholarship, and Creative Activity Program, Dec/2012 to Aug/2013, Principal Investigator.

21. "Development of Improved Safety Standards for Biomechanical Evaluation of Padded Playing Surfaces," California State University Los Angeles Research, Scholarship, and Creative Activity Program, Dec/2011 to Aug/2012, Principal Investigator.

22. "Development of a MADYMO Model for Evaluating Blunt Ballistic Impacts to the Human Chest," Wayne State University and the Stress and Motivated Behavior Institute, University of Medicine and Dentistry of New Jersey, 2010.

REFEREED JOURNAL PUBLICATIONS

1. Curran, J.B., Raymond, D.E. War clubs in Southern California: An Interdisciplinary Study of Blunt Force Weapons and Their Impact, *Journal of Archaeological Method and Theory*, https://doi.org/10.1007/s10816-020-09493-4, Jan 2021.

2. L'Abbé E.N., Symes, S.A., Raymond, D.E., Ubelaker, D.H. The Rorschach Butterfly – Understanding Bone Biomechanics Prior to Using Nomenclature in Bone Trauma Interpretations, *Forensic Science International*, Vol. 299, June, 187-194, 2019.

3. Johnson, D.J., Raymond, D.E., Chen, C., Quon, M., Lis, J., Choi, M.R., Han, A., de Leon, R.D., Bir, C.A. A Molecular Method to Detect Wound Cells in Bloodstains Resultant of Sharp Force Injuries for Crime Scene Reconstruction, *Journal of Forensic Sciences*, May, Vol. 63(3): 842-848, 2018.

4. L'Abbe, E.N., Symes, S.A., Pokines, J.T., Cabo, L.L., Stull, K.E., Kuo, S., Raymond, D.E., Randolph-Quinney, P.S., Berger, L.R. Evidence of Fatal Skeletal Injuries in Malapa Hominins 1 and 2, *Scientific Reports*, 5:15120, Oct., 2015.

5. Raymond, D.E., Bir, C.A. A Biomechanical Evaluation of Skull-Brain Surrogates to Blunt High-Rate Impacts, *Journal of Forensic Sciences*, March, Vol. 60(2): 370-373, 2015.

6. Raymond, D.E., Catena, R.D., Vaughan, T.R. Biomechanics and Injury Risk Assessment of Falls onto Protective Floor Mats, *Rehabilitation Nursing*, Vol. 36 (6): 248-254, 2011.

7. Raymond, D., Van Ee, C., Crawford, G., Bir, C. Tolerance of the Temporo-Parietal Skull to Blunt Ballistic Impact, *Journal of Biomechanics*, Vol. 42 (15): 2479-2485, 2009.

8. Raymond, D., Crawford, G., Van Ee, C., Bir, C. Development of Biomechanical Response Corridors of the Head to Blunt Ballistic Temporo-Parietal Head Impact, *Journal of Biomechanical Engineering*, Vol. 131 (9): 094506, 2009.

9. Raymond, D.E., Bir, C.A., Begeman, P.C., Chien, H.C. The Effect of Occupant Size on Head Displacement in Frontal Collisions, SAE Transactions, *Journal of Passenger Cars-Mechanical Systems*, 116(6): 1407-1413, Warrendale, PA, 2007.

CONFERENCE PROCEEDINGS

1. Verdin, D., Krinsky, S., Raymond, D., Schiorring, E., Allen E.L. HSI Implementation and Evaluation Project: Commitment to Learning Instilled by a Mastery-based Undergraduate Program (CLIMB-UP), *Proceedings of the ASEE Annual Conference*, June 25-28, 2023.

2. Wang, Y., Kuo, J., Shen, H., Brieu, M., Raymond, D. A Human-Centric Education Model Inspired from Modern Manufacturing Processes, *Proceedings of the ASEE Annual Conference*, Virtual Meeting, July 26-29, 2021. [*Best Paper Award, ASEE-TELPhe Division*]

3. Curran, J. and Raymond, D. Blunt Impact: The Role of War Clubs in Prehistoric California Warfare, *Proceedings of the Society for American Archeology 81st Annual Conference*, Orland0, FL, 2016.

4. Huang, J., Raymond, D., Shen, W., Stuhmiller, J., Crawford, G., Bir, C. Development and Validation of a Subject-Specific Finite Element Model for Skull Fracture Assessment, *ASME International Mechanical Engineering Congress & Exposition*, Denver, CO, November 11-17, 2011.

5. Van Ee, C., Raymond, D., Plunkett, J., Hardy, W., Thibault, K. Child ATD Reconstruction of a Fatal Pediatric Fall, *ASME International Mechanical Engineering Congress & Exposition*, Lake Buena Vista, FL, November 13-19, November, 2009.

6. Van Ee, C., Moroski-Browne, B., Raymond, D., Plunkett, J., Hardy, W., Thibault, K. Evaluation and Refinement of the CRABI-6 Anthropomorphic Test Device Injury Criteria for Skull Fracture, *ASME International Mechanical Engineering Congress & Exposition*, Lake Buena Vista, FL, November 13-19, November, 2009.

7. Raymond, D.E., Crawford, G.S., Van Ee, C., Bir, C.A. The Effect of Soft Tissue on the Biomechanics of Skull Fracture Due to Blunt Ballistic Impact: Preliminary Analysis and Findings, *Proceedings of the ASME Summer Bioengineering Conference*, Marco Island, FL, June 25-29, 2008.

8. Raymond, D.E., Crawford, G.S., Van Ee, C., Bir, C.A. Biomechanics of Temporo-Parietal Skull Fracture from Blunt Ballistic Impact, *Proceedings of the ASME Summer Bioengineering Conference*, Marco Island, FL, June 25-29, 2008.

9. Raymond, D.E., Bir, C.A., Begeman, P.C., Chien, H.C. The Effect of Occupant Size on Head Displacement in Frontal Collisions, *Society of Automotive Engineers World Congress*, Detroit, MI, *SAE Technical Paper Series 2007-01-1503*, Warrendale, PA, 2007.

10. Raymond, D.E., Bir, C.A., Begeman, P.C., Chien, H.C., Wheeler, J.B. Determination of Seat Belt Usage in Automotive Collisions: Development of a Diagnostic Tool, *Proceedings of the Society of Automotive Engineers World Congress*, Detroit, MI, *SAE Technical Paper No. 2006-01-1128*, Warrendale, PA, 2006.

11. Raymond, D.E., Landerville, J.B., Wheeler, J.B., Dainty, D.A. A Parametric MADYMO Analysis for the Determination of Seat Belt Usage in a Severe Frontal Collision, *Proceedings of the XXth Congress of the International Society of Biomechanics*, Cleveland, OH, August 1-5, 2005.

12. Raymond, D.E., Fatzinger, E.C., Connors, T.J., Wheeler, J.B. Occupant Kinematic Analysis of an Unbelted Minivan Passenger: A Free Body Approach, *Proceedings of the XXth Congress of the International Society of Biomechanics*, Cleveland, OH, August 1-5, 2005.

13. Raymond, D.E., Kelley, C.M., Wheeler, J.B. Forensic Investigation of Lumbar Disc Injury in an Industrial Setting, *Proceedings of the XIXth Congress of the International Society of Biomechanics*, Dunedin, New Zealand, July 6-12, 2003.

OTHER ABSTRACTS AND POSTERS

1. Verdin, D., Krinsky, S., Raymond, D., Schiorring, E., Allen, E., Leon, C.P. HSI Implementation & Evaluation Project: Commitment to Learning Instilled by a Mastery-Based Undergraduate Program (CLIMB-UP), *NSF Grantees*, *ASEE Annual Conference*, June 25-28, 2023.

2. Curran, JB, Lee, Y., Curran, T., Raymond, DE. The Impact of War Clubs: An Interdisciplinary Analysis of Conflict, *Proceedings of the Society for American Archeology 82nd Annual Conference*, Vancouver, British Columbia, March 29-30, 2017.

3. Raymond, DE. Engineering Statics with Supplemental Instruction, *California State University ePortfolio Showcase on Course Redesign with Technology*, June 2016.

4. Curran, JB, Raymond DE, The Effect of War Clubs: The Experimental Archaeological Analysis of Blunt Force Trauma in Southern California, *Proceedings of the 50th Annual Meeting of the Society for California Archaeology*, Ontario, CA, March 2016.

5. Johnson, D.J., Raymond, D.E., de Leon, R. Investigations on the Use of Tissue MicroRNA Markers to Correlate Bloodstains with Wounds for Bloodstain Pattern Analysis, *68th Annual Meeting of the American Academy of Forensic Sciences*, Las Vegas, NV, February 2016.

6. Roberts, K.A., Johnson, D.J., Raymond, D.E. Planning Grant Award for an Industry/University Cooperative Research Center, *California Association of Criminalists Spring 2015 Seminar*, Ventura, CA, May 6, 2015.

7. Rushton, H., Wu, A., Rodriguez, J., Negrete, J., Tepas, K., Johnson, D., Raymond, D. Development of an Imaging System for the On-Site Determination of the Area-of-Origin of Blood Spatter, *California Association of Criminalists Spring 2015 Seminar*, Ventura, CA, May 6, 2015.

8. Lis, J., Quon, M., Raymond, D., Johnson, D. Evaluation of the Effect of Force on the Generation and Detection of Tissue Specific miRNA, *California Association of Criminalists Spring 2015 Seminar*, Ventura, CA, May 6, 2015.

9. Khalil, A., Raymond, D., Miller, E. An Analysis of Butterfly Fracture Propogation, *67th Annual Meeting of the American Academy of Forensic Sciences*, Orlando, FL, February 2015.

10. Covarrubias, E., Pascual, M., Rodriguez, N., Sanchez, M., Khalil, A., Ruiz, P., Raymond, D. Biomechanical Tolerance of Human Tibia Models Under Dynamic Latero-Medial Bending, *CSULA Undergraduate Research Forum*, Los Angeles, CA, June 6, 2014.

11. L'Abbé, E.N, Symes, S.A., Chapman, E.N., Pinheiro, J.E., Kull, K.E., Raymond, D.E. Nomenclature in Lieu of Understanding the Effects and Components of Kinetic Energy in Bone Trauma Interpretations, *66th Annual Meeting of the American Academy of Forensic Sciences*, Seattle, WA. February, 2014.

12. Pinheiro, J.E.S., L'Abbe, E.N., Symes, S.A., Chapman, E.N., Stull, K.E., Raymond, D. New Approach to the Traditional English Classification of Trauma and Bone Implications, *66th Annual Meeting of the American Academy of Forensic Sciences*, Seattle, WA. February, 2014.

13. Lauren, A., Abundis, H., Aguilar, R., Rosas, B., Tovar, M., Raymond D. Development and Validation of a Trauma-Indicating Biomechanical Headform, *Proceedings of the Measurement Science Conference, Anaheim*, CA, March, 2013.

14. Raymond , D.E., Bir, C.A., Crawford, G.S., Van Ee, C.A. Biomechanical Evaluation of Frangible Skull Surrogates to Blunt Ballistic Temporo-Parietal Head Impact, *Proceedings of the 65th Annual Meeting of the American Academy of Forensic Sciences*, Washington D.C. February, 2013.

15. Greb, J.M., Bir, C.A., Raymond, D.E. Investigation of Real-World Blunt Head Trauma Using a Commercial Skull/Brain Surrogate, *Proceedings of the 65th Annual Meeting of the American Academy of Forensic Sciences*, Washington D.C. February, 2013.

16. Symes, S.A., L'Abbé, E.N, Stull, K.E., Wolff, I., Raymond D.E. A Return to the Basic Principles of Biomechanics to Interpret Blunt Force Trauma in Long Bones, *Proceedings of the 65th Annual Meeting of the American Academy of Forensic Sciences*, Washington D.C. February, 2013.

17. Symes, S.A., Wolff, I., L'Abbé, E.N, Raymond, D.E. What do anthropologists miss when tension and compression are the only modes considered in bone failure?, *Latin American Forensic Anthropology Association Congress,* Antigua, Guatemala, 2012.

18. Schwenke, M., Scholvinck, M., Chica, X., Pereira, C., Hsu, J., Raymond, DE., Smith TA. Development of Portable Impact Test System for the Evaluation of Padded Surfaces and the Improvement of their Safety Standards, *Measurement Science Conference*, Anaheim, CA, March 19-23, 2012.

19. Jones, K.O., McBeth, Z., Campbell, J.Q., Zhang, H., Wheeler, J., Raymond, D. Children in Rollover Accidents: Review of the NASS-CDS 1995-2007, *Annals of Advances in Automotive Medicine (AAAM)*, Vol. 54, October, 2010.

20. Crawford, G.S., Raymond, D.E., Van Ee, C., Bir, C.A. Biomechanics of Blunt Ballistic Impact to the Forehead and Zygoma, *Proceedings of the 60th Annual Meeting of the American Academy of Forensic Sciences*, Washington D.C. February, 2008.

21. Raymond, D.E., Crawford, G.S., Van Ee, C., Bir, C.A. Biomechanics of Blunt Ballistic Impact to the Head and Fracture-Specific Injury Criteria, *Proceedings of the 60th Annual Meeting of the American Academy of Forensic Sciences*, Washington D.C. February, 2008.

22. Raymond, D.E., Begeman, P., Chien, H.C., Bir, C.A. Modeling Head Displacement in Frontal Collisions, *Proceedings of the 60th Annual Meeting of the American Academy of Forensic Sciences*, Washington D.C. February, 2008.

23. Raymond, D.E., Wheeler, J.B., Bir, C.A. Utilizing Physical Evidence to Elucidate Seat Belt Usage in Automotive Collisions Through Biomechanical Simulation, *Proceedings of the 59th Annual Meeting American Academy of Forensic Sciences*, San Antonio, TX, 2007.

TECHNICAL REPORTS AND THESES

1. Raymond D.E., Arrioja, R., Baltazar, A. Investigating the Biomechanical Response of the Canine to Blunt Impact, *Center for Pet Safety*, Reston, VA, Contract No. 231525, March 2019.

2. Bir, C.A., Raymond, D.E. Development of a Design Tool for Less-Lethal Kinetic Energy Rounds, *Report to the Stress and Motivated Behavior Institute, University of Medicine and Dentistry of New Jersey, New Jersey, NJ*, 2010.

3. Raymond, D.E. Biomechanical Evaluation of Secure® Floor Mats, *Report to Personal Safety Corporation, Cedar Rapids, IA*, 2010.

4. Raymond, D.E. Biomechanics of Blunt Ballistic Temporo-Parietal Head Impact, Ph.D. Dissertation, *Wayne State University - Biomedical Engineering Department*, Detroit MI, 2008.

5. Raymond, D.E., Crawford, G.S., Bir, C.A. Biomechanics of the Skull and Face to Blunt Ballistic Impact, *Report to the Joint Non-Lethal Weapons Directorate, Quantico, VA*, Grant No. M67854-06-1-5016, July, 2007.

6. Raymond, D.E. An In Vitro Biomechanical Analysis of the Effect of Decompression and Stabilization of the Canine Cervical Spine, *Undergraduate Thesis*, 1998.

STUDENT THESES AND DESIGN PROJECTS

Doctoral Dissertations

1. Cortney N. Hulse, "Blunt Force Trauma to the Ribs: Creating Predictive Models," Ph.D., Anthropology, University of Nevada, Reno, December 2021 (committee).

Master's Theses

1. Strickland, David, "Design of Experiments for High-Temperature Lithium-Ion Battery," Mechanical Engineering, California State University, Los Angeles, May 2024 (committee).

2. Antonelli, Lillian, "A Biomechanical Evaluation of Nonhuman Analogues in Skeletal Trauma Research," Anthropology, California State University, Chico, May 2024. (committee)

3. Finn, Stephen, "Modeling the Ligaments of the Female Pelvic Floor System through Iteration of Finite Element Analysis and a Transverse Isotropic Constitutive Model," Mechanical Engineering, California State University, Los Angeles, August 2023. (committee)

4. Cerda Solorio, Cesar, "Evolution of the Mechanical Properties of Degradable Biomaterials," Mechanical Engineering, California State University, Los Angeles, May 2023. (committee)

5. Ajrab, Yousef Raja, "The Evolution of the Mechanical Properties of Biodegradable Materials with Respect to Time and Aspect Ratio," Materials Science and Engineering, California State University, Los Angeles, May 2023. (committee)

6. Edwardo O. Conde, "Design and Development of an Impact Propulsion System for Head & Neck Injury Studies of Helmet-to-Helmet American Football Collisions," Mechanical Engineering, California State University, Los Angeles, August 2022. (principal advisor)

7. Edgar A. Marroquin, "Optimization of a Continuously Variable Transmission for a Baja SAE Vehicle," M.S., Mechanical Engineering, California State University, Los Angeles, December 2021. (committee)

8. Kenji Karuhaka, "Motion Capture Tracking and Synchronization with EEG for Development of Non-invasive Brain Computer Interface," M.S., Electrical Engineering, California State University, Los Angeles, December 2019. (committee)

9. Alexis Yang, "The Impacts of Air Pistols on Ribs," M.A., Department of Anthropology, California State University, Los Angeles, May 2018. (committee)

10. Aimee Earl, "A Comparison and Analysis of Rib Fracture Patterns Sustained by Two Less-Lethal Kinetic Energy Munitions," M.A., Department of Anthropology, California State University, Los Angeles, May 2017. (committee)

11. Majed Alsubiei, "Biomechanical Analysis of Motorcycle Helmets with Omni-Directional Suspension (ODS) Technology to Oblique Impacts," M.S., Department of Mechanical Engineering, California State University, Los Angeles, December 2016. (principal advisor)

12. Vicente Munguia, "Video-Game Hardware for the Real World: Using Joint-Angle Extraction to Assist Physical Therapy," M.S., Department of Mechanical Engineering, California State University, Los Angeles, June 2016. (committee)

13. Heather Rushton, "Development of an Imaging System for the On-Site Determination of the Area-of-Origin of Blood Spatter," M.S., School of Criminal Justice and Criminalistics, California State University, Los Angeles, June 2015. (committee)

14. Angela Khalil, "An Analysis of the Propagation of Butterfly Fractures in the Lower Limbs Initiated through Blunt Force Trauma," M.A., Department of Anthropology, California State University, Los Angeles, December 2014. (committee)

M.S. Graduate Mechanical Design Projects

1. Nicholas Peters, Brianna Rojas, "Development and Validation of a Finite Element Model of a Motorcross Helmet Shell," California State University, Los Angeles, June 2016.

2. Tony Mashhour, "The Development of a Three Phase and Homopolar Motor Apparatus and an Explanation of Wye and Delta Wiring Configurations," California State University, Los Angeles, June 2016.

Undergraduate Senior Mechanical Design Projects

1. Vu La, Pablo Lara, Heriberto Cruz Ramirez, Randeep Singh, Alejandro Bustos, "Design of a Novel Helmet Impact Drop Apparatus," California State University, Los Angeles, June 2020.

2. Jonathan Mendoza, Arnaldo Rendon, Arturo Sandoval, Josimar Sanchez, Bryan Nguyen, "Design of a Low-Speed Crash Sled," California State University, Los Angeles, June 2020.

3. Jose Ramirez, Jesse Acevedo, Omar Moreno, Eugene Lopez, Ali Alyami, Daniel Barahona, "Design of a Low-Speed Crash Sled," California State University, Los Angeles, June 2018.

4. Shea Richards, Michael Morales, Kevin Srivongse, Matthew Estrada, "Development and Validation of a 6D Helmet Finite Element Model," California State University, Los Angeles, June 2016.

5. Tony Mashhour, Nicholas Peters, Faddy Sunna, Carla Ibarra, "Development of a Surrogate Headform for Ballistic Blood Spatter Research," California State University, Los Angeles, June 2016.

6. Angela Wu, Joel Negrete, Jose Rodriguez, Kevin Tepas, "Development of the Source Origin Revealing System," California State University, Los Angeles, June 2014.

7. Ana Ramos, Jorge Nieto, Krit Chinn, Paul Ruiz, "Medtronic CGMS Leak Test Apparatus," California State University, Los Angeles, June 2014.

8. Amy Laurin, Hugo Abundis, Michelle Tovar, Robert Aguilar, Brenda Rosas, "Development of an Instrumented Projectile Impactor for Injury Biomechanics Research," California State University, Los Angeles, June 2013.

9. Matthew Scholvinck, Christian Pereira, Mathew Schwenke, Jimmy Hsu, Xavier Chica, "Development of a Portable, Universal Impact Testing Device," California State University, Los Angeles, June 2012.

PRESENTATIONS

1. Raymond D. CSI Body Mechanics: The Role of Injury Biomechanics in Analyzing Motor Vehicle Collisions, *Los Angeles District Attorney's Office, D.T.A.P.S. Vehicular Homicide College,* Los Angeles, October 22, 2020.

2. Raymond D. CSI Body Mechanics: The Role of Injury Biomechanics in Analyzing Motor Vehicle Collisions, *Los Angeles District Attorney's Office, D.T.A.P.S. Virtual Roundtable*, Los Angeles, June 24, 2020.

3. Raymond, D. and Brieu, M. Equity Approach in Statics Class: What Happens When you Try Something Different?, *First-Year Experience (FYrE) Community Workshop,* Cal State LA, Jan. 31, 2020.

4. Raymond, D., Pacheco-Vega, A., Kuo, Y.J. Fundamentals of Fluid Dynamics, *International Association of Bloodstain Pattern Analysts Training Conference*, Redondo Beach, CA, Sep 27, 2017.

5. Raymond, D. On the Development of a Surrogate Headform for Forensic Bloodstain Pattern Analysis, *Los Angeles Visionaries Association Crime Lab Seminar*, Hertzberg-Davis Forensic Science Center, Los Angeles, CA, Dec 11, 2016.

6. Raymond, D. Crash: Injury Biomechanics, *Los Angeles District Attorney's Seminar*, Los Angeles, CA May 16, 2015.

7. Raymond, D. Applied Injury Biomechanics, *CSULA Forensic Science Symposium*, Los Angeles, CA, April 10, 2015.

8. Roberts, K., Johnson, D., Raymond, D., Miller, E. Collaborations in Forensic Science, *ORAD Cafe*, California State University, Los Angeles, November 18, 2014.

9. Raymond, D. Forensic Injury Biomechanics, *Los Angeles District Attorney's Forensic Science Forum*, Alhambra, CA, September 11, 2014.

10. Raymond, D. Forensic Injury Biomechanics, *Los Angeles Visionaries Association Crime Lab Seminar*, Hertzberg-Davis Forensic Science Center, Los Angeles, CA, July 13, 2014.

11. Hampton, P., Raymond, D. Preparing for STEM. *California State University Counselors Conference*, Pasadena, CA, September 23-24, 2013.

12. Raymond, D., Bir, C. Impact Biomechanics: Fundamentals to Applications, *California Association of Criminalists Seminar Workshop*, Pasadena, CA, May 20, 2013.

13. Raymond, D. Head Impact Biomechanics and Human Injury Prevention, *Center for Energy and Sustainability Seminar Series*, California State University, Los Angeles, CA, May 3, 2013.

14. Huang, J., Raymond, D., Shen, W., Stuhmiller, J., Crawford, G., Bir, C. Development and Validation of a Subject-Specific Finite Element Model for Skull Fracture Assessment, *ASME International Mechanical Engineering Congress & Exposition*, Denver, CO, November 16, 2011.

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16. Raymond, D.E. Forensic Applications of Injury Biomechanics, *Analysis of Bone Trauma and Pseudo-Trauma in Suspected Violent Deaths Workshop, Mercyhurst Archaeological Institute,* Eric, Pennsylvania, June 13-17, 2011.

17. Raymond, D.E. Forensic Applications of Injury Biomechanics, *Los Angeles County Department of Coroner, Forensic Science Seminar Series*, Los Angeles, California, May 12, 2011.

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