Xin Ye

PhD

Senior Consultant

Dr. Xin Ye is a biomechanical engineer whose specialties include injury biomechanics, accident reconstruction, and sports injury evaluation. Dr. Ye has been working as an engineering consultant since 2019. He has extensive experience using biomechanical analysis to analyze the biomechanics of human response, and to opine on the injury mechanism and consistency of accidents and activities. He has testified as an expert witness in numerous depositions and trials.

Dr. Ye's previous academic experience includes computational modeling and accident reconstruction using human body models, as well as analysis of lumbar spine and lower extremity injuries sustained in motor vehicle crashes. He has also been involved in developing a computational football helmet model for head concussion research, sponsored by the NFL. He was also involved in a NASA project that investigated the lumbar spine response of astronauts in spaceflight landing conditions. Additionally, his past academic research includes the investigation of knee airbag effectiveness on lower extremity injuries using a combination of sled testing, computational modeling, and real-world data analysis. He has published many peer-reviewed journal papers and has also presented at numerous national and international conferences.

Education

PhD, Biomedical Engineering. Wake Forest University. 2018

MS, Mechanical Engineering. University of Virginia. 2015

BS, Mechanical Engineering. Jiangsu University. 2011

Languages

- English
- Chinese

Positions Held

Engineering Systems Inc., Santa Ana, CA

- Senior Consultant, 2026 – Present

Contact Information

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ESi Santa Ana

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Santa Ana, CA 92705

Areas of Specialization

- Injury Biomechanics
- Injury Mechanisms
- Injury Tolerance
- Premise Liability
- Slips, Trips and Falls
- Sports Injury Prevention
- Occupant Kinematics
- Experimental Testing
- Anthropomorphic Test Device (ATD) Testing
- Computational Modeling
- Accident Reconstruction
- Motor Vehicle Accidents

YA Group, LLC, Los Angeles, CA

- Senior Biomechanist, 2024 – 2026

Rimkus Consulting Group, Inc., Los Angeles, CA

- Senior Consultant, 2019 – 2024

Continuing Education

- **Applying Automotive EDR Data to Traffic Crash Reconstruction** – SAE International, 2025
- **Injury, Anatomy, Biomechanics & Federal Regulation** – SAE International, 2025
- **Bosch Crash Data Retrieval System Training** – Collision Safety Institute, 2024
- **Crash Investigation 2** – Northwestern University, Center for Public Safety, 2020
- **Crash Investigation 1** – Northwestern University, Center for Public Safety, 2019

Professional Affiliations

Society of Automotive Engineers (SAE)

Association for the Advancement of Automotive Medicine (AAAM)

Biomedical Engineering Society (BMES)

IEEE Engineering in Medicine and Biology Society (EMBS)

Professional Honors

Ohio State Injury Biomechanics Symposium

- Student Presenter Travel Award, 2018

61st Association for the Advancement of Automotive Medicine Conference

- John D. States Best Student Paper Award, 2017

53rd Rocky Mountain Biomechanics Symposium

- Best Paper Award, 2016
- 3rd Place in Presentation Award, 2016

Ohio State Injury Biomechanics Symposium

- Student Presenter Travel Award, 2013 & 2014

International Mathematical Contest in Modeling

- Meritorious Winner, 2011

Publications

Tu, W., Zhang, P., Zhang, J., Liu, Y., **Ye, X.**, & Zhang, X. (2025). Occupant kinematic and injury responses in zero-gravity seat under low-, medium-, and high-speed rear impacts with different seat belt systems. Applied Sciences, 15(12), 6388.

Zhang, X., Zhang, W., Gao, J., Tu, Z., **Ye, X.**, Liu, Y., & Tu, W. (2025). Biofidelity investigation and chest structure enhancement of Q3 dummy restrained in impact shield child restraint system. Annals of Biomedical Engineering, 1-10.

Zhang, X., Feng, B., Xue, Z., Liu, Y., **Ye, X.**, Tu, W. (2024). The effectiveness of Q6 and PIPER 6-year-old models on quantification of the change of child sitting posture with AEB and its impact on child's injures in frontal crash. Traffic Injury Prevention, 25(6), 825–831.

Ye, X., Jones, D. A., Gaewsky, J. P., Koya, B., McNamara, K. P., Saffarzadeh, M., Putnam, J.B., Somers, J.T., Gayzik, F.S., Stitzel, J.D., Weaver, A. A. (2020). Lumbar spine response of computational finite element models in multidirectional spaceflight landing conditions. Journal of Biomechanical Engineering, 142(5), 051007.

Decker, W., Baker, A., **Ye, X.**, Brown, P., Stitzel, J., Gayzik, F. S. (2020). Development and multi-scale validation of a finite element football helmet model. Annals of Biomedical Engineering, 48(1), 258-270.

Weaver, A. A., Costa, C., Ambrosini, A., Tan, J., Maez, L., **Ye, X.**, Stitzel, J.D., Lenchik, L. (2019). Sarcopenia and osteosarcopenia in seriously injured motor vehicle crash occupants. Traffic Injury Prevention, 20(sup2), S195-S197.

Ye, X., Gaewsky, J., Miller, L., Jones, D., Kelley, M., Suhey, J., Koya, B., Weaver, A., Stitzel, J. (2018). Numerical investigation of driver lower extremity injuries in finite element frontal crash reconstruction. Traffic Injury Prevention, 19(sup1), S21-S28.

Ye, X., Gaewsky, J., Jones, D., Miller, L., Stitzel, J., Weaver, A. (2018). Computational modeling and analysis of thoracolumbar spine fractures in frontal crash reconstruction. Traffic Injury Prevention, S1-S8.

Gaewsky, J., Jones, D., **Ye, X.**, Koya, B., McNamara, K., Gayzik, F., Weaver, A., Putnam, J., Somers, J., Stitzel, J. (2018). Modeling human volunteers in multidirectional, uni-axial sled tests using a finite element human body model. Annals of Biomedical Engineering, 1-25.

Nie, B., Sathyanarayan D., **Ye, X.**, Crandall, J., Panzer, M. (2018). Active muscle response contributes to increased injury risk of lower extremity in occupant-knee airbag interaction. Traffic Injury Prevention, 19(sup1), S76-S82.

Kim, T., Funk, J. R., Bollapragada, V., **Ye, X.**, Crandall, J. (2017). Evaluation of biofidelity and repeatability of THOR-Lx metric under axial impact loading. International Journal of Precision Engineering and Manufacturing, 18(7), 1027-1034.

Ye, X., Funk, J., Forbes, A., Hurwitz, S., Shaw, G., Crandall, J., Freeth, R., Michetti, C., Rudd, R. Scarboro, M. (2015). Case series analysis of hindfoot injuries sustained by drivers in frontal motor vehicle crashes. Forensic Science International, 254, 18-25.

Ye, X., Poplin, G., Bose, D., Forbes, A., Hurwitz, S., Shaw, G., Crandall, J. (2015). Analysis of crash parameters and driver characteristics associated with lower limb injury. Accident Analysis & Prevention, 83, 37-46.

Kim, T., Shin, J., **Ye, X.**, Crandall, J., Knospe, C., Funk, J. (2013). Evaluation of methods for the development of representative responses and corridors from biomechanical data using mechanical models. International Journal of Crashworthiness, 18(6), 633-646.

Refereed Conference Publications

Decker, W., **Ye, X**., Baker, A., Stitzel, J., Gayzik, S. (2018). Comparison of CORA to head injury biomechanical metrics using an American football helmet model. IRCOBI Proceedings, IRC-18-53.

Gaewsky, J., Jones, D., **Ye, X**., Koya, B., McNamara, K., Saffarzadeh, M., Gayzik, F., Weaver, A., Stitzel, J. (2018). Human surrogate finite element models under multi-directional loading: applications of aerospace data for the future of automotive environments. Stapp Car Crash Conference.

McNamara, K. P., Jones, D. A., Gaewsky, J. P., **Ye, X**., Koya, B., Saffarzadeh, M., Gayzik, F. S., Weaver, A. A., Stitzel, J. D. (2017). Validating FE Hybrid III, THOR, and GHBMC M50-OS for future spaceflight configuration testing. Ohio State Injury Biomechanics Symposium.

Ye, X., Gaewsky, J., Koya, B., Jones, D., Barnard, R., Weaver, A., Stitzel, J. (2016). Automated analysis of driver response in a finite element crash test reconstruction. Biomed Sci. Instrum.66-74.

Nie, B., **Ye, X**., Riley, P., Crandall, J. R., Panzer, M. B. (2015). Investigation of active muscle response on the occupant knee airbag interaction in frontal impacts. IRCOBI Proceedings, IRC-15-22.

Ye, X., Panzer, M., Shaw, G., Crandall, J. (2014). Driver lower extremity response to out of position knee airbag deployment. IRCOBI Proceedings, IRC-14-27.

Conference Publications (Abstract or Non-Refereed)

Ye, X., Jones, D., Gaewsky, J., Miller, L., Weaver, A., Stitzel, J. (2018). Numerical analysis of driver thoracolumbar spine response in frontal crash reconstruction. Ohio State Injury Biomechanics Symposium.

Gaewsky, J., Jones, D., **Ye, X.**, McNamara, K., Saffarzadeh, M., Koya, B., Gayzik, F., Weaver, A., Stitzel, J. (2017). Validation of GHBMC M50-OS for spaceflight configuration testing. GHBMC Users' Workshop.

Ye, X., Jones, D., Gaewsky, J., Koya, B., McNamara, K., Saffarzadeh, M., Gayzik, S., Weaver, A., Stitzel, J. (2017). Validation of a finite element human body model for spaceflight testing configurations. BMES Annual Meeting.

Gaewsky, J., Jones, D., Koya, B., **Ye, X.**, McNamara, K., Saffarzadeh, M., Gayzik, S., Weaver, A., Stitzel, J. (2017). Simplified human body model performance compared to multidirectional human volunteer testing. 45th International Workshop on Human Subjects for Biomechanical Research.

McNamara, K., Jones, D., Gaewsky, J., **Ye, X.**, Saffarzadeh, M., Koya, B., Gayzik, S., Weaver, A., Stitzel, J. (2017). Validation FE Hybrid III and THOR for future spaceflight configuration testing. BMES Annual Meeting.

Ye, X., Gaewsky, J., Miller, L., Jones, D., Kelley, M., Suhey, J., Koya, B., Weaver, A., Stitzel, J. (2017). Numerical investigation of lower extremity injuries in frontal crash reconstruction. VT-WFU SBES Symposium.

Ye, X., Gaewsky, J., Jones, D., Koya, B., Barnard, R., Weaver, A., Stitzel, J. (2016). Semi-automated analysis of driver response in a finite element crash test reconstruction. BMES Annual Conference.

Ye, X., Gaewsky, J., Koya, B., Jones, D., Barnard, R., Weaver, A., Stitzel, J. (2016). Semi-automated analysis of driver response in a finite element crash test reconstruction. VT-WFU SBES Symposium.

Ye, X., Panzer, B., Crandall, J. (2014). Driver lower extremity to out-of-position knee airbag deployment. Ohio State Injury Biomechanics Symposium.

Ye, X., Crandall, J., Forbes, A., Bose, D., Hurwitz, S., Funk, J., Shaw, G., Sochor, M., Poplin, G., Freeth, R., Rizzo, R., Rudd, R., Scarboro, M. (2014). Case series analysis of hind-foot injuries sustained by drivers in frontal motor vehicle crashes. International Crashworthiness Conference.

Ye, X., Bose, D., Crandall, J. (2013). Longitudinal trend and patterns in lower extremity injuries in frontal motor vehicle crashes. Ohio State Injury Biomechanics Symposium.

Kim, T., Shin, J., **Ye, X.**, Crandall, J., Knospe, C., Funk, J. (2012). Evaluation of methods for development of representative response and corridors of biomechanical data using mass-springer-damper models. International Crashworthiness Conference.