

GENE J.-W. HOU

Professional Preparation

National Cheng Kung University, Taiwan, R.O.C., B.S.M.E., 1974
National Taiwan University, Taiwan, R.O.C., M.S.M.E., 1976
University of Iowa, Iowa City, Iowa, Ph.D., 1983

Appointments

Old Dominion University, Norfolk, VA

1995-present, Professor of Department of Mechanical Engineering
2004-2012, Graduate Program Director, Department of Mechanical Engineering
1989-1995, Associate Professor of Mechanical Engineering
1983-1989, Assistant Professor of Mechanical Engineering

NASA Langley Research Center, Hampton, VA

1994-1996, Resident Consultant of Institute for Computer Applications in Science and Engineering

Recent Publications

1. Robert James Haupin and Gene Jean-Win Hou, "A Unit-Load Approach for Reliability-Based Design Optimization of Linear Structures under Random Loads and Boundary Conditions", *Designs* 2023, 7(4),96; <https://doi.org/10.3390/designs7040096>.
<https://www.mdpi.com/2411-9660/7/4/96>
2. Lena A. Royster and Gene Hou, 'Gradient-Based Trade-Off Design for Engineering Applications.', *Designs* 2023, 7(4), 81; <https://doi.org/10.3390/designs7040081>.
<https://www.mdpi.com/2411-9660/7/4/81>
3. Gene Hou, Brain Johnson, Jonathan Degroff, Steven Trenor. and Jennifer Michaeli, "Dynamic Response Modeling of High-Speed Planing Craft with Enforced Acceleration", *Ocean Engineering*, Vol. 192, November 2019.
<https://www.sciencedirect.com/science/article/pii/S0029801819306353>
4. Lee B. A, Qureshi, S., Lee, S., Hou, G. J., Bedard, P., Hou, J. H., Peripheral Endothelial Cell Density in Descemet Membrane Endothelial Keratoplasty Grafts, *Cornea*. 2019 Jun;38(6):748-753. doi: 10.1097/ICO.0000000000001925. PMID: 30882543
5. Asim Timalisina, Gene Hou, Jin Wang, "Partitioned Computation for Fluid-structure Interaction with Rigid Body Motion," *Journal of Advances in Applied Mathematics*, Vol. 3, No.1, pp. 29-41, January 2018, <https://dx.doi.org/10.22606/jaam.2018.31003>

Other Publications

1. Khajah, T. and Hou, G., "Parameter Identification for Vertical Ground Reaction Forces on Feet while Running," *Sports Engineering*, July, 2015, DOI 10.1007/s12283-015-0179-1
2. Hou, G., Wang, J. and Layton, A., "Numerical Methods for Fluid-Structure Interaction – A Review", *Communication in Computational Physics*, Vol. 12, No.2, pp. 337-377, Aug., 2012.

Synergistic Activities:

Dr. Hou's expertise are in computational mechanics, fluid-structure interaction, multibody dynamics, multidisciplinary design optimization, stochastic modeling and design with uncertainty. His academic accomplishments include 51 journal articles, 67 proceeding papers and has secured external funds of over 3 million dollars as the Principal Investigator or a co-Principal Investigator. Funding sources range from various governmental agencies such as NSF, NASA Langley, NSWCCD CCD and extend to high-level industries including Ford, General Motors, Newport News Shipbuilding Co. and CDI Marine Engineering. The relationships he has been able to establish with local industries have also helped me earn the Excellence in Industrial Partnering Award of the College of Engineering and Technology in 2002. During his tenure, he has the privilege of developing 2 new undergraduate and 6 new graduate courses in the areas of solid mechanics, computational methods, design optimization, engineering reliability and uncertainty, engineering software applications.

Dr. Hou has served as the faculty advisor for the capstone project Autonomous Surface Vehicle and developed an undergraduate course on Intelligent Machines, jointly offered with Electrical and Computer Engineering Department.

Recent Collaborators:

Cong Wei (ODU), Ayodeji Demuren (ODU), Sebastian Bawab (ODU), Keith Williamson (Virginia State University), Sushil Chaturvedi (ODU), Julie Hao (ODU), Duc Nguyen (ODU), Jennifer Grimsley (CDI Marine Engineering), Timothy Coats (NAVSEA, Carderock), Brian Grimsley (NASA Langley), Evan Lee (NAVSEA, Carderock),

Graduate Advisor:

Edward J. Haug (University of Iowa), Robert L. Benedict (Formerly, University of Iowa, Currently with Goodyear)

Thesis Advisors:

Number of Graduate Students Advised: 39 Master's and 16 Ph.D.'s. Most of them are working in the industry after graduation, except Drs. Eslami, Sheen and Floersheim and Khajah. Dr. Eslami is a faculty at the Elizabeth City State University, Elizabeth City, Dr. Sheen is a faculty in the Engineering Department at the Norfolk State University, Dr. Bruce Floersheim, Lt Colonel, US Army, is a faculty in the Civil and Mechanical Engineering at West Point Military Academy. Dr. Khajah is a faculty in the Mechanical Engineering Department at University of Texas at Tyler.

Honors and Awards:

The College Excellence Award in Industry Partnering, 2002

The Most Inspiring Faculty Award, as determined by the College's top honors undergraduate students; three times: 1993, 2000 and 2012

The Ralph R. Teetor Educational Award, SAE, The Engineering Society for Advancing Mobility, Land Sea Air and Space, 1988.

Presidential Young Investigator Award, National Science Foundation, 1987-92.

ASME Outstanding MEM Faculty Award, 1985-86 and 1995-96