

# CURRICULUM VITAE

University of Idaho

**NAME:** Xing, Tao

**DATE:** Oct 3, 2017

**RANK OR TITLE:** Associate Professor

**DEPARTMENT:** Mechanical Engineering

**OFFICE LOCATION:** Engineering Physics Building  
Room 324F  
MS 0902  
Moscow, ID 83844-0902

**OFFICE PHONE:** (208) 885-9032

**FAX:** (208) 885-9031

**EMAIL:** [xing@uidaho.edu](mailto:xing@uidaho.edu)

**WEB:** <http://www.taoxing.net>

**DATE OF FIRST EMPLOYMENT AT UI:** August 14, 2011

**DATE OF TENURE:** July 1, 2016

**DATE OF PRESENT RANK OR TITLE:** July 1, 2016

## EDUCATION BEYOND HIGH SCHOOL:

### Degrees:

Ph.D., Purdue University, West Lafayette, Indiana, August 2002, Mechanical Engineering  
M.S., Xi'an Jiaotong University, Xi'an, Shaanxi Province, 1998, China, Energy and Power Engineering  
B.S., Xi'an Jiaotong University, Xi'an, Shaanxi Province, 1995, China, Energy and Power Engineering

### Certificates and Licenses:

Professional Engineer (PE), Registered in Idaho, License #15995, since 2014.

## EXPERIENCE:

### Teaching, Extension and Research Appointments:

July 2016-present, Associate Professor (tenured), Mechanical Engineering, University of Idaho  
August 2011-June 2016, Assistant Professor, Mechanical Engineering, University of Idaho  
January 2009-July 2011, Assistant Professor, Mechanical Engineering, Tuskegee University  
September 2006-December 2008, Adjunct Assistant Professor, Department of Industrial and Mechanical Engineering, University of Iowa  
September 2005-December 2008, Assistant Research Scientist, IIHR-Hydroscience & Engineering, University of Iowa.  
September 2002-August 2005, Postdoctoral Associate, IIHR-Hydroscience & Engineering, University of Iowa

### Academic Administrative Appointments:

N/A

### Non-Academic Employment including Armed Forces:

N/A

### Consulting:

Consultant for the project titled “Numerical Modeling of Hydrofoils and Surface Marine Vehicles,” \$7,000 in 2017 and \$3,000 in 2018

## **TEACHING ACCOMPLISHMENTS:**

### **Areas of Specialization:**

Computational fluid dynamics, verification & validation, turbulence, wind turbine, lung and pulmonary ventilation, desalination, ship hydrodynamics, vehicle aerodynamics, heat transfer, thermodynamics

### **Courses Taught (University of Idaho):**

ME 4/504 – Turbulence Modeling, Spring 2017  
 BCB 507 – Laboratory Experience in the Computational Sciences, Fall 2016  
 CE 411 – Engineering Fundamentals (Fluid Mechanics Section), Spring & Fall 2014, Spring & Fall 2015, Spring & Fall 2016  
 ENGR 320 – Engineering Thermodynamics and Heat Transfer, Spring 2012  
 ENGR 335 – Engineering Fluid Mechanics, Summer (EO only) 2012, Fall 2012, Fall 2014, Spring 2015  
 ME 417/517 – Turbomachinery, Fall 2016  
 ME 424 – Mechanical Systems Design I, Fall 2013, Fall 2014, Fall 2015, Fall 2016  
 ME 426 – Mechanical Systems Design II, Spring 2014, Spring 2015, Spring 2016  
 ME 435 – Thermal Energy System Design, Fall 2011, Fall 2012, Fall 2013  
 ME 4/520 & CE 520 – Fluid Dynamics, Fall 2013, Fall 2015  
 ME 4/504 – Computational Fluid Dynamics, Spring 2012, Spring 2013 (ME 404 only)  
 ME 4/550 – Computational Fluid Dynamics, every Spring Semester since 2014  
 ME 541 – Mechanical Engineering Analysis, Fall 2011, Fall 2015

### **Courses Taught (Tuskegee University):**

MENG 0313 – Fluid Mechanics, Spring 2009, Fall 2009, Spring 2010, Fall 2010, Spring 2011  
 MENG 0418 – Principles of Heating, Ventilating, and Air-conditioning, Fall 2009, Spring 2010, Fall 2010, Spring 2011

### **Student Advised (University of Idaho) (asterisk indicates the student has graduated):**

#### **Undergraduate Students:**

Advised to completion of degree: 80 per year

#### **Consultant of Senior Design Teams:**

Waste Heat Management, 2016-2017

#### **Lead Instructor of Senior Design Teams:**

Water Sediment Solutions, 2016-2017  
 Centri-clean, 2015-2016  
 Saline Solution, 2015-2016  
 Dynamic Fish Manure Extractor System, 2014-2015  
 Alternative Drain Pan Defrost, 2014-2015  
 Integrated Rocket Ramjet (IRR): Team Rocket, 2014-2015  
 Fins for Filtration, 2013-2014  
 Geothermal Heat Pump, 2013-2014  
 University of Idaho Steam Power, 2013-2014

#### **Project Advisor:**

Kelly Moore, University of Idaho Wind Resource Assessment, 2013-2014

**Graduate Students:**

## Advised to completion of degree-major professor:

Sally Mei, M.S.,	Summer 2018
Ahmad H. Abdel-Azim, M.S.,	Fall 2017
Austin Doutre*, M.S.,	Summer 2017
Sean Quallen*, Ph.D.,	Summer 2015
Joseph George*, M.S.,	Summer 2015
Landon Owen*, M.S.,	Summer 2013

## Served on graduate committee:

Rey DeLeon*, Ph.D.,	Summer 2017
Jennifer Hasenoehr*, Ph.D.,	Summer 2016
Zheting Bi*, Ph.D.,	Summer 2015
Richard Skifton*, Ph.D.,	Summer 2015
Timothy J. Lenberg*, M.S.,	Summer 2014
Drew Flerchinger*, M.S.,	Fall 2013
Mike Bryner*, M.E.,	Spring 2013
Thomas Conder*, Ph.D.,	Fall 2012
Garrett Hanson*, M.S.,	Summer 2012
Sean Quallen*, M.E.,	Fall 2011

## Postdoctoral Fellow:

Rabijit Dutta,	May 2016 – present
----------------	--------------------

**Courses Developed:**

ME 450/550, Computational Fluid Dynamics  
 ME 417/517, Turbomachinery  
 ME 404/504, Turbulence Modeling

**Honors and Awards:**

2014, Alumni Award for Excellence, University of Idaho  
 2013, Alumni Award for Excellence, University of Idaho

**SCHOLARSHIP ACCOMPLISHMENTS: (\* indicates student co-authors)****Publications, Exhibitions, Performances, Recitals:****Book Chapters**

Bhushan, S., Xing, T., Visonneau, M., Wackers, J., Deng, G., Stern, F., Larsson, L., "Post-Workshop Computations and Analysis for KVLCC2 and 5415," Chapter 7, PP. 265-318, in Numerical Ship Hydrodynamics: An assessment of the Gothenburg 2010 Workshop. Editors: Lars Larsson, Frederick Stern, Michel Visonneau, Springer, 2014. ISBN: 978-94-007-7188-8, 2014.

Xing, T., Frankel, S.H., and Ramadhyani, S., "Towards Large Eddy Simulation of Cavitation in Hydraulic Valves," in Lubricants for Off-Highway Applications, published by Society of Automotive Engineers, Inc., ISBN 0-7680-0648-1, pp.67-76, 2000.

**Refereed Journal Papers:**

Skifton\*, R., Budwig, R., McEligot, D., Crepeau, J., Xing, T., "Entropy Generation for a Bypass Transitional Boundary Layer," ASME Journal of Fluids Engineering, Vol. 139, Issue 4, pp. 041203-041203-13. DOI: 10.1115/1.4035223, 2017.

- Khani\*, M., Xing, T., Gibbs\*, C., Oshinski, J., Stewart, G.R., Zeller, J.R., Martin, B.A., 2017, "Non-uniform Moving Boundary Method for CFD Simulation of Intrathecal Cerebrospinal Flow Distribution in a Cynomolgus Monkey," ASME Journal of Biomechanical Engineering, Vol. 139, Issue 8, pp. 081005-081005-12, DOI: 10.1115/1.4036608
- Quallen\*, S., Xing, T., "CFD Simulation of a Floating Offshore Wind Turbine System Using a Variable-Torque Generator Controller," Renewable Energy, Vol. 97, pp. 230-242, 2016.
- Abdel-Maksoud, M., Müller, V., Xing, T., Toxopeus, S., Stern, F., Kim, S., Shawn, A., Petterson, K., Tormalm, M., Gietz, U., Schiller, P., Rung, T., "Experimental and Numerical Investigations on Flow Characteristics of the KVLCC2 at 30° Drift Angle," SNAME Transactions, Vol. 123, pp. 139-164, 2016.
- Yuan\*, X.L., Xing, T., "Numerical Investigation on the Tail Part Hydrodynamic Characteristics of Supercavitating Vehicles," Ocean Engineering, Vol. 114, pp. 37-46, DOI: 10.1016/j.oceaneng.2016.01.012, 2016.
- Xing, T., Stern, F., "Comment on: 'A Procedure for the Estimation of the Numerical Uncertainty of CFD Calculations based on Grid Refinement Studies' (Eça, L. and Hoekstra, M., 2014, Journal of Computational Physics, 262, pp. 104-130)," Journal of Computational Physics, Vol. 301, pp. 484-486, 2015.
- Xing, T., "A General Framework for Verification and Validation of Large Eddy Simulations," Journal of Hydrodynamics (Ser. B), Vol. 27, No. 2, pp. 163-175. DOI: 10.1016/S1001-6058(15)60469-3, 2015 (one of the most downloaded articles in this Journal).
- Stern, F., Wang, Z.Y., Yang, J.M., Sadat-Hosseini, H., Mousaviraad, M., Bhushan, S., Diez, M., Yoon, S.H., Wu, P.C., Yeon, S.M., Dogan, T., Kim, D.H., Volpi, S., Conger, M., Michael, T., Xing, T., Thodal, R.S., Grenestedt, J.L., "Recent Progress in CFD for Naval Architecture and Ocean Engineering," Journal of Hydrodynamics (Ser. B), Vol. 27, No. 1, pp. 1-23, DOI: 10.1016/S1001-6058(15)60452-8, 2015 (one of the most downloaded articles in this Journal).
- Xing, T., "Direct Numerical Simulation of Open Von Karman Swirling Flow," Journal of Hydrodynamics (Ser. B), Vol. 26, No. 2, pp. 165-177, DOI: 10.1016/S1001-6058(14)60019-6, 2014.
- Quallen\*, S., Xing, T., Carrica, P., Li\*, Y.W., Xu, J., "CFD Simulation of a Floating Offshore Wind Turbine System Using a Quasi-Static Crowfoot Mooring-Line Model," Journal of Ocean and Wind Energy, Transactions of the ISOPE, Vol. 1, No. 3, pp. 143-152, 2014.
- Quallen\*, S., Xing, T., Carrica, P., Li\*, Y.W., Xu, J., "DISCUSSION: CFD Simulation of a Floating Offshore Wind Turbine System Using a Quasi-Static Crowfoot Mooring-Line Model," Journal of Ocean and Wind Energy, Transactions of the ISOPE, Vol. 1, No. 3, pp. 185-188, 2014.
- George\*, J., Owen\*, L., Xing, T., McEligot, D.M., Crepeau, J.C., Budwig, R.S., Nolan, K.P., "Entropy Generation in Bypass Transitional Boundary Layer Flows," Journal of Hydrodynamics, Vol. 26, No. 5, pp. 669-680, DOI: 10.1016/S1001-6058(14)60075-5, 2014 (one of the most downloaded articles in this Journal).
- Zhang\*, H.J., Xie\*, Q., Xing, T., and Qiang, Y., "Magnetic Separation Nanotechnology for Water Remediation and Spent Nuclear Fuel Recycling," Journal of the Idaho Academy of Science, 50.1: 80, 2014.
- Toxopeus, S.L., Simonsen, C.D., Guilmineau, E., Visonneau, E.G., Xing, T., Stern, F., "Investigation of

- Water Depth and Basin Wall Effects on KVLCC2 in Manoeuvring Motion Using Viscous-Flow Calculations,” *Journal of Marine Science and Technology*, DOI 10.1007/s00773-013-0221-6, 2013.
- Stern, F., Yang, J.M., Wang, Z.Y., Sadat-Hosseini, H., Mousaviraad, M., Bhushan, S., Xing, T., “Computational Ship Hydrodynamics: Nowadays and Way Forward,” *International Shipbuilding Progress*, Vol. 60, No. 1-4, pp. 3-105, DOI 10.3233/ISP-130090, 2013.
- Xing, T., Bhushan, S., and Stern, F., “Vortical and turbulent structures for KVLCC2 at Drift Angle 0, 12, and 30 Degrees,” *Ocean Engineering*, Vol. 55, pp. 23-43, 2012.
- Bhushan, S., Xing, T., Stern, F., “Vortical Structures and Instability Analysis for Athena Wetted Transom Flow with Full-scale Validation,” *ASME Journal of Fluids Engineering*, Vol. 134, Issue 3, p. 031201, 2012.
- Li\*, Y., Paik\*, K.J., Xing, T., Carrica, P.M., “Dynamic Overset CFD Simulations of Wind Turbine Aerodynamics,” *Renewable Energy*, Vol. 37, Issue 1, pp. 285-298, 2012.
- Xing, T. and Stern, F., “Closure to “Discussion of ‘Factors of Safety for Richardson Extrapolation,’”” *ASME Journal of Fluids Engineering*, Vol. 133, No. 11, p. 115502, 2011.
- Xing, T. and Stern, F., “Factors of Safety for Richardson Extrapolation,” *ASME Journal of fluids engineering*, Vol. 132, No. 6, DOI: 061403, 2010.
- Pinto\*, H., A., Xing, T., Stern, F., “URANS and DES for Wigley Hull at Extreme Drift Angles,” *Journal of Marine Science and Technology*, Vol. 15, No. 4, pp. 295-315. DOI: 10.1007/s00773-010-0092-z, 2010.
- Ismail\*, F., Carrica, P., Xing, T., Stern, F., “Evaluation of Linear and Nonlinear Convection Schemes on Multidimensional Non-Orthogonal Grids with Applications to KVLCC2 Tanker,” *International Journal of Numerical Methods in Fluids*, Vol. 64, Issue 8, pp. 850-886. DOI: 10.1002/flid.2174, 2010.
- Bhushan, S., Xing, T., Carrica, P., Stern, F., “Model- and Full-scale URANS Simulations of Athena Resistance, Powering, Seakeeping, and 5415 Maneuvering,” *Journal of Ship Research*, Vol. 53, No. 3, pp. 1-21, 2009.
- Kandasamy, M., Xing, T., Stern, F., “Unsteady Free-Surface Wave-Induced Separation: Vortical Structures and Instabilities,” *Journal of Fluids and Structures*, Vol. 25, Issue 2, pp. 343-363, 2009.
- Xing, T., Carrica, P., Stern, F., “Computational Towing Tank Procedures for Single Run Curves of Resistance and Propulsion,” *ASME Journal of Fluids Engineering*, Vol. 130, No.1, 101102, 2008.
- Xing, T., Kandasamy, M., Stern, F., “Unsteady Free-Surface Wave-Induced Boundary Layer Separation: Analysis of Turbulent Structures Using Detached Eddy Simulation and Single-phase Level Set Method,” *Journal of Turbulence*, Vol. 8, No. 44, pp. 1-35, 2007.
- Stern, F., Xing, T., Yarbrough, D., Rothmayer, A., Rajagopalan, G., Otta, S.P., Caughey, D., Bhaskaran, R. Smith. S., Hutching, B., and Moeykens, S., “Hands-On CFD Educational Interface for Engineering Courses and Laboratories,” *Journal of Engineering Education*, Volume 95, No. 1, pp. 63-83, 2006.
- Stern, F., Xing, T., Muste, M., Yarbrough, D., Rothmayer, A., Rajagopalan, G., Caughey, D., Bhaskaran, R. Smith. S., Hutching, B., and Moeykens, S., “Integration of Simulation Technology into Undergraduate Engineering Courses and Laboratories,” *International Journal of Learning Technology*, Vol. 2, No. 1, pp. 28-48, 2006.

- Stern, F., Xing, T., Yarbrough, D., Rothmayer, A., Rajagopalan, G., Otta, S.P., Caughey, D., Bhaskaran, R. Smith. S., Hutching, B., and Moeykens, S., "Hands-On CFD Educational Interface for Engineering Courses and Laboratories," *Annals of Research on Engineering Education*, Vol. 2, No. 2, 2006.
- Parihar, A., and Kulkarni, A., Stern, F., Xing, T., and Moeykens, S., "Using FlowLab, an Educational Computational Fluid Dynamics Tool, to Perform a Comparative Study of Turbulence Models," *Computational Fluid Dynamics Journal*, Vol. 15, No. 1, pp. 175-182, 2006.
- Xing, T., Li, Z.Y., and Frankel, S.H., "Numerical Simulation of Vortex Cavitation in a Three-Dimensional Submerged Transitional Jet," *ASME Journal of Fluids Engineering*, Vol. 127, No. 4, pp. 714-725, 2005.
- Xing, T. and Frankel, S.H., "Effect of Cavitation on Vortex Dynamics in a Two-Dimensional Submerged Laminar Jet," *AIAA Journal*, Vol. 40, No. 11, pp. 2266-2276, 2002.
- Yu, B.F., Ge, J., Wang, Z.G., Xing, T., Feng, J., Qu, Y.M., Zhu, X.L., Zhu, X.Z., "Computerized Simulation of Temperature and Velocity Field in Freezer," *Journal of Refrigeration (in Chinese)*, Vol. 1, 1997.

**Refereed Journal Papers (currently scheduled or submitted):**

- Dutta\*, R., Murdoch, G., Xing, T., "Comparison of Flow and Washout Characteristics between Convective and High Frequency Percussive Ventilators under Various Lung Conditions," in preparation for *American Journal of Respiratory and Critical Care Medicine*, 2017.
- Abdel-Maksoud, M., Müller, V., Xing, T., Toxopeus, S., Stern, F., Kim, S., Shawn, A., Petterson, K., Tormalm, M., Gietz, U., Schiller, P., Rung, T., "Experimental and Numerical Investigation on Flow Characteristics of the KVLCC II at 30° Drift Angle," in preparation for *Journal of Marine Science and Technology*, 2017.
- Quallen\*, S., Xing, T., "CFD Simulation of a Floating Offshore Wind Turbine System Experiencing Irregular Waves and Incoming Wind Turbulence," in preparation for *Renewable Energy*, 2017.

**Refereed Conference Papers:**

- Dutta\*, R., Xing, T., "Quantitative Solution Verification of Large Eddy Simulation of Channel Flow," *Proceedings of the 2<sup>nd</sup> Thermal and Fluid Engineering Conference, TFEC2017 & 4<sup>th</sup> International Workshop on Heat Transfer, IWH2017, April 2-5, 2017, Las Vegas, NV, USA.*
- Khani\*, M., Xing, T., Gibbs, C., Oshinski, J., Stewart, G.R., Zeller, J.R., Martin, B.A., "CFD Model and MRI Measurement of Intrathecal Cerebrospinal Fluid Dynamics in a Cynomolgus Monkey," *SB<sup>3</sup>C2017 Summer Biomechanics, Bioengineering and Biotransport Conference, June 21 - 24, Tucson, AZ, USA.*
- Natividad\*, G.C., Cleveley, B., Sass, L.R., Xing, T., Baledent, O., Kurtcuoglu, V., Martin, B.A., "Neuroculus Virtual Reality Simulator of the Cerebrospinal Fluid System," *SB<sup>3</sup>C2017 Summer Biomechanics, Bioengineering and Biotransport Conference, June 21 - 24, Tucson, AZ, USA.*
- Sass\*, L.R., Natividad\*, G.C., Cleveley, B., Khani\*, M., Xing, T., Baledent, O., Martin, B.A., "NEUROCHI®: A Virtual Reality and in vitro Model of the CSF System for Teaching and Research," *The ninth Meeting of the International Society for Hydrocephalus and Cerebrospinal Fluid Disorders, September 23-25, 2017, Kobe, Japan.*

- Abdel-Maksoud, M., Müller, V., Xing, T., Toxopeus, S., Stern, F., Kim, S., Shawn, A., Petterson, K., Tormalm, M., Gietz, U., Schiller, P., Rung, T., “Experimental and Numerical Investigation on Flow Characteristics of the KVLCC2 at 30o Drift Angle,” 5<sup>th</sup> World Maritime Technology Conference, Nov. 3-7, 2015, Rhode Island Convention & Omni Hotel, Providence, Rhode Island, USA, 2015.
- Quallen\*, S., Xing, T., “An Investigation of the Blade Tower Interaction of a Floating Offshore Wind Turbine,” 2015-TPC-0991, ISOPE-2015 Hawaii, Kona, Big Island, USA, June 21 – 26, 2015.
- Dunkel\*, C., Oliver\*, R., Xing, T., Hess, H., Beyerlein, S., Shrestha, D., Smith, S., “Collaboration between Senior Design Students and Campus Facilities Staff in Creating a Viable Cogeneration Design for the Campus Wood-Fired Boiler,” 2015 ASEE 122<sup>nd</sup> Annual Conference & Exposition, Washington Convention Center, Seattle, WA, June 14-17, 2015.
- Stern, F., Wang, Z.Y., Yang, J.M., Sadat-Hosseini, H., Mousaviraad, M., Bhushan, S., Diez, M., Yoon, S.H., Wu, P.C., Yeon, S.M., Dogan, T., Kim, D.H., Volpi, S., Conger, M., Michael, T., Xing, T., et al., “Recent Progress in CFD for Naval Architecture and Ocean Engineering (**keynote speaker**),” Proceedings of the 11th International Conference on Hydrodynamics (ICHHD 2014), Singapore, October 19-24, 2014.
- Xing, T., 2014, “A General Framework for Verification and Validation of Large Eddy Simulations (**keynote speaker**),” the 13<sup>th</sup> National Congress on Hydrodynamics & 26th Conference on Hydrodynamics, Qingdao, China, August 22 – 27, 2014.
- Owen\*, L., Xing, T., McEligot, D.M., Crepeau, J.C., Budwig, R.S., “Laminar and Transitional Boundary Layer Entropy Generation over a Flat Plate under Favorable and Adverse Pressure Gradients,” Proceedings of the ASME 2013 Fluids Engineering Summer Meeting, FEDSM2013-16314, Incline Village, Nevada, July 7-11, 2013.
- Quallen\*, S., Xing, T., Carrica, P., Li, Y.W., Xu, J., “CFD Simulation of a Floating Offshore Wind Turbine System Using a Quasi-Static Crowfoot Mooring-Line Model,” Proceedings of the 23<sup>rd</sup> International Ocean and Polar Engineering Conference, ISOPE-2013-TPC-0855, Anchorage Convention Center, Alaska, 2013
- Stern, F., Yang, J.M., Wang, Z.Y., Sadat-Hosseini, H., Mousaviraad, M., Bhushan, S., Xing, T., “Computational Ship Hydrodynamics: Nowadays and Way Forward,” 29<sup>th</sup> Symposium on Naval Hydrodynamics, Gothenburg, Sweden, 26-31 August 2012.
- Xing, T., Burge, L.L. Jr., Aglan, H.A., “Integration of Mobile Technology into Undergraduate Engineering Curriculum,” ASEE 2011 Annual Conference & Exposition, Vancouver, BC, Canada, June 26-29, 2011.
- Xing, T., Carrica, P., Stern F., “Large-Scale RANS and DDES Computations of KVLCC2 at Drift Angle 0 Degree,” Gothenburg 2010: A Workshop on CFD in Ship Hydrodynamics, Sweden, December 8-10, 2010.
- Yang, J., Bhushan, S., Suh, J.S., Wang, Z.Y., Koo, B., Sakamoto, N., Xing, T., and Stern, F., “Large-Eddy Simulation of Ship Flows with Wall-Layer Models on Cartesian Grids,” 27<sup>th</sup> Symposium on Naval Hydrodynamics Seoul, Korea, 5-10 October, 2008.
- Stern, F., Ismail, F., Xing, T., Carrica, P., “Vortical and Turbulent Structures Using Various Convection Schemes with Algebraic Reynolds Stress-DES Model for the KVLCC2 at Large Drift Angles,” 27<sup>th</sup> Symposium on Naval Hydrodynamics Seoul, Korea, 5-10 October 2008.
- Wyatt, D.C., Fu, T.C., Taylor, G.L., Terrill, E.J., Xing, T., Bhushan, S., O’Shea, T.T., and Dommermuth,

- D.G., "A Comparison of Full-Scale Experimental Measurements and Computational Predictions of the Transom-Stern Wave of the R/V/ Athena I," 27<sup>th</sup> Symposium on Naval Hydrodynamics Seoul, Korea, 5-10 October 2008.
- Xing, T., Shao, J., and Stern, F., "BKW- RS-DES of Unsteady Vortical Flow for KVLCC2 at Large Drift Angles," the 9<sup>th</sup> international conference on Numerical Ship Hydrodynamics, Ann Arbor, Michigan, 2007.
- Bhushan, S., Xing, T., Carrica, P., Stern, F., "Model- and Full-scale URANS/DES Simulations for Athena Resistance, Powering, and Motions," the 9<sup>th</sup> international conference on Numerical Ship Hydrodynamics, Ann Arbor, Michigan, 2007.
- Carrica, P.M., Wilson, R.V., Noack, R., Xing, T., Kandasamy, M., Shao, J., Sakamoto, N., and Stern, F., "A Dynamic Overset, Single-Phase Level Set Approach for Viscous Ship Flows and Large Amplitude Motions and Maneuvering," the 26<sup>th</sup> Symposium on Naval Hydrodynamics, Rome, Italy, 17-22 September 2006.
- Miller, R., Gorski, J., Xing, T., Carrica, P., Stern, F., "Resistance Predictions of High Speed Mono and Multi-hull Ships with and without Water Jet Propulsors using URANS," the 26<sup>th</sup> Symposium on Naval Hydrodynamics, Rome, Italy, 17-22 September 2006.
- Gorski, J., Miller, R., Carrica, P., Kandasamy, M., Xing, T., and Stern, F., "Hydrodynamics Prediction of High Speed Sea Lift (HSSL) Ships," DOD High Performance Computing Modernization Program, Users Group Conference, Denver, Colorado, 2006.
- Kandasamy, M., Xing, T., Wilson, R., Stern, F., "Vortical and Turbulent Structures and Instabilities in Unsteady Free-Surface Wave-Induced Separation," Proceedings 5<sup>th</sup> Osaka Colloquium on Advanced Research on Ship Viscous Flow and Hull Form Design by EFD and CFD Approaches, Osaka Prefecture University, March 14-15, 2005.
- Parihar, A., and Kulkarni, A., Stern, F., and Xing, T., Moeykens, S., "Using FlowLab, an Educational Computational Fluid Dynamics Tool, to Perform a Comparative Study of Turbulence Models," The 13<sup>th</sup> Annual Conference on Computational Fluid Dynamics, St. John's, Canada, 2005.
- Xing, T., Kandasamy, M., Wilson, R., and Stern, F., "DES and RANS of Unsteady Free-Surface Wave Induced Separation," 42<sup>nd</sup> AIAA Aerospace Sciences Meeting, AIAA-2004-0065, Reno, Nevada, Division for Fluid Dynamics, 2004.
- Stern, F., Xing, T., Yarbrough, D., Rothmayer, A., Rajagopalan, G., Otta, S.P., Caughey, D., Bhaskaran, R. Smith. S., Hutching, B., and Moeykens, S., "Development of Hands-On CFD Educational Interface for Undergraduate Engineering Courses and Laboratories," ASEE Annual Conference, Salt Lake City, UT., 2004.
- Stern, F., Muste, M., Xing, T., and Yarbrough, D., "Hands-On Student Experience with Complementary CFD Educational Interface and EFD and Uncertainty Analysis for Introductory Fluid Mechanics," ASME Heat Transfer/Fluids Engineering Summer Conference (**Keynote Speaker**), Charlotte, North Carolina, July 11-15, 2004.
- Stern, F., Xing, T., Muste, M., Yarbrough, D., Rothmayer, A., Rajagopalan, G., Caughey, D., Bhaskaran, R. Smith. S., and LaRoche R., "Integration of Simulation Technology into Undergraduate Engineering Courses and Laboratories," ASEE Annual Conference, Nashville, TN, 2003.
- Stern, F., Wilson, R., Longo, J., Carrica, P., Xing, T., Tahara, Y., Simonsen, C., Kim, J., Shao, J., Irvine, M., Kandysamy, K., Gosh, S., and Weymouth, G., "Paradigm for Development of Simulation Based Design for Ship Hydrodynamics," 3<sup>rd</sup> International Conference: Navy and Shipbuilding Nowadays (MSN' 2003), Krylov Shipbuilding, Research Institute, St. Petersburg, Russia, 26-28



June 2003.

Stern, F., Wilson, R., Longo, J., Carrica, P., Xing, T., Tahara, Y., Simonsen, C., Kim, J., Shao, J., Irvine, M., Kandasamy, K., Ghosh, S., and Weymouth, G., "Paradigm for Development of Simulation Based Design for Ship Hydrodynamics," Proc. 8<sup>th</sup> International Conference on Numerical Ship Hydrodynamics, Busan, Korea, 2003.

Xing, T. and Frankel, S.H., "Effect of Cavitation on Vortex Dynamics in a Two-Dimensional Submerged Jet," 31<sup>st</sup> AIAA Fluid Dynamics Conference and Exhibit, AIAA-2001-2906, 11-14, Anaheim, California, 2001.

Xing, T., Frankel, S.H. and Ramadhyani, S., "Towards Large Eddy Simulation of Cavitation in Hydraulic Valves," International Off-Highway & Powerplant, Congress & Exposition, SAE-2000-01-2613, 11-13, Milwaukee, Wisconsin, 2000.

#### **Non-Refereed Research Reports**

Abdel-Maksoud, M., Müller, V., Xing, T., Toxopeus, S., Stern, F., Kim, S., Shawn, A., Petterson, K., Tormalm, M., Gietz, U., Schiller, P., Rung, T., "Experimental and Numerical Investigation on Flow Characteristics of the KVLCC II at 30° Drift Angle," Tech. Rep. 183, NATO AVT, 2015.

Xing, T., Carrica, P., Stern, F., "Developing Streamlined Version of CFDShip-Iowa-V4.5," IIHR Technical Report No. 479, 2011.

Xing, T. and Stern F., "Factors of Safety for Richardson Extrapolation," IIHR Technical Report No. 476, 2010.

Xing, T. and Stern F., "Factors of Safety for Richardson Extrapolation," IIHR Technical Report No. 469, 2009

Xing, T. and Stern F., "Factors of Safety for Richardson Extrapolation for Industrial Applications" IIHR Technical Report No. 466, 2008.

#### **Non-Refereed Conference Presentations:**

Quallen\*, S., Xing, T., "CFD Analysis of Wind Turbine Blade Tower Interaction," the 56<sup>th</sup> Idaho Academy of Science Annual Meeting and Symposium, Moscow, Idaho, USA, 2014.

Xing, T., George\*, J., "Quantitative Verification and Validation of Large Eddy Simulations," ASME 2014 Verification and Validation Symposium, Las Vegas, Nevada, USA, May 7-9, 2014.

Zhang\*, H.J., Xie\*, Q., Xing, T., Qiang, Y., "Magnetic Separation Nanotechnology for Water Remediation and Spent Nuclear Fuel Recycling," the 56<sup>th</sup> Idaho Academy of Science Annual Meeting and Symposium, Moscow, Idaho, USA, 2014.

Zhang\*, H.J., Xing, T., Qiang, Y., "Magnetic Nanosorbents for Heavy Metal and Radioactive Waste Treatment," Materials Science & Technology 2013, David L. Lawrence Convention Center, Pittsburgh, PA, USA, October 12-16, 2014.

#### **Doctoral Dissertation:**

Xing, T., "Numerical Modeling and Simulation of Laminar and Transitional Submerged Cavitating Jets," School of Mechanical Engineering, Purdue University, West Lafayette, Indiana, USA, 2002.

#### **Invited Talks (exclude presentations of conference papers):**

- “Recent Development of Solution Verification and Validation for Computational Fluid Dynamics,” invited by Dr. Lan (Samatha) Li, Boise State University, 2015 CAES Materials, Modeling, Simulation and Visualization Workshop, McCall, Idaho, USA, May 13-14, 2015.
- “Simulation and Experimental Study of a New Desalting Technology,” Invited by Professors David Atkinson and Herb Hess, Department of Electrical & Computer Engineering, University of Idaho, April 23, 2015.
- Keynote Lecture**, “Verification and Validation in Computational Fluid Dynamics,” Invited by Prof. Zhou Lian-di, Executive Editor of the Journal of Hydrodynamics, 13<sup>th</sup> National Congress on Hydrodynamics & 26<sup>th</sup> Conference on Hydrodynamics, Qingdao, P.R.China, August 22-27, 2014
- “Vortical and Turbulent Structures for KVLCC2 at Large Drift Angles,” Invited by Prof. Jin Liu, Washington State University, Pullman, Jan. 31, 2013
- “CFD for Wind Turbine Simulations,” Invited by Prof. Wang Qiuwang, Xi’an Jiaotong University, Xi’an, P.R.China, June 20, 2012.
- “Recent Development of CFD and its application on Ship Hydrodynamics and Wind Turbine Simulations,” Invited by Prof. Li Huaxing, Northwestern Polytechnical University, Xi’an, P.R.China, June 19, 2012.
- “Recent Development on Solution Verification for Numerical Simulations,” Invited by Dr. Lyudmyla Barannyk for graduate students’ seminar, University of Idaho, Oct. 13, 2011.
- “Application of CFD for Renewable Energy: onshore and Offshore Wind Turbine Simulations,” The second annual CAES workshop on modeling, simulation, and visualization, Boise, Idaho, September 8-9, 2011.
- “Comments on Analysis of G2010 Results for Test Case 1.1a,” Invited by Prof. Frederick Stern, CFD Workshop in Ship Hydrodynamics, Gothenburg, Sweden, Dec. 8–10, 2010.
- “Comments on Grid Dependence and Uncertainty,” Invited by Prof. Frederick Stern, CFD Workshop in Ship Hydrodynamics, Gothenburg, Sweden, Dec. 8–10, 2010.
- “Factors of Safety for Richardson Extrapolation,” Invited by William Rider from Sandia National Laboratory, 2<sup>nd</sup> International Verification and Validation Workshop for Nuclear Systems, Myrtle Beach, South Carolina, May 24-28, 2010.
- “Mobile Technology Pilot Status and Reporting,” invited by Dr. Legand Burge, CEAPS Workshop: Curriculum Development: Sustainable Development, Concepts for a New Administration, Curriculum and Technology, The Kellogg Hotel and Conference Center, Tuskegee, May 13-14, 2010.
- “Recent Development of Verification Procedures using Richardson Extrapolation,” Invited by Prof. W.Q. Tao, School of Energy and Power Engineering, Xi’an Jiaotong University, Xi’an, P.R.China, Dec. 23-25, 2009.
- “0413: Integrating CFD into the Undergraduate Curriculum,” invited by Prof. Jennifer Curtis, ASEE 2006 Annual Conference at Chicago, June 18 2006.

**Google Scholar Profile (as of October 3, 2017):**

<https://scholar.google.com/citations?user=qx6tFBEAAAJ>

My Google Scholar h-index is 18 (18 publications have at least 18 citations) and i10-index is 27 (27

publications have at least 10 citations); total number of citations is 993 (750 since 2012).

**Grants and Contracts Awarded:**

- Co-PI, "Aerogel Insulation System: An Innovative Energy Efficient Thermal Wall," Avista Inc., 8/1/2017 – 8/30/2018, \$88,777
- PI, "Comparison of Two Phasitron Designs for IPV," Percussionaire Corp., 2/15/2017 – 6/15/2017, \$6,963.
- Co-PI, "Hydrodynamic Simulator for Brain Therapeutic Development," Vandal Ideas Project, University of Idaho, 7/1/2016 – 8/31/2017, \$75,000.
- PI, "Multi-scale Model of Interaction between Lung and Pulmonary Ventilation," Center for Modelling Complex Interactions, University of Idaho, U.S. National Institutes of Health, 01/01/2016 – 01/31/2017, \$108,975.
- PI, "CO<sub>2</sub> Scrubber," Vorsana Inc., 08/24/2015 - 08/23/2016, \$8,478.75.
- PI, "Desalination Investigation," Vorsana Inc., 08/24/2015 - 08/23/2016, \$8,478.75.
- PI, "Vorsana Desalination Investigation," Vorsana Inc., 08/16/2015 – 08/15/2016, \$97,064.
- PI, "Aerodynamic Effects on Two-Lane Rural Highway Safety," The Pacific Northwest Transportation Consortium (PacTrans), Region 10 University Transportation Center, U.S. Department of Transportation (DOT), 08/01/2015 – 12/15/2016, \$120,000 (\$60,000 DOT funding, \$60,000 University of Idaho matching).
- PI, "Initial Study on Vorsana Desalter," Vorsana Inc., 08/15/2014 – 6/20/2015, \$70,626.
- PI, "Colmac Drainpan Defrost," Colmac Coil Manufacturing Inc., 08/25/2014 – 5/29/2015, \$4,423.65.
- Co-PI, (PI: J. Alves-Foss, other Co-PIs: F. Barlow, G.P. Potirniche, L. Barannyk, F. Ytreberg), "Acquisition of an Adaptive Computation Server for Support of STEM Research at the University of Idaho," 03/27/14 – 03/26/15, Murdock Foundation, \$240,000.
- Co-PI, (PI: J. Alves-Foss, other Co-PIs: F. Barlow, G.P. Potirniche, L. Barannyk, F. Ytreberg), "MRI: Acquisition of an Adaptive Computation Server for Support of STEM Research at the University of Idaho," U.S. National Science Foundation, Division of Computer and Network Systems, Major Research Instrumentation, Award # 1229766, 09/01/2012 – 08/31/2015, \$428,571 (\$300,000 NSF funding, and \$128,571 UI cost share).
- PI, "Automatic and Dynamic Cleaning System for Commercial Fish Ponds," Service-Learning Mini-Grant, University of Idaho, 2014 – 2015, \$750.
- PI, "Numerical Simulation of Magnetic Nanoparticles Using Electromagnetic Separation Device," Seed Grant of The University of Idaho, July 1, 2012 – Aug. 31, 2013, \$11,969.60.
- PI, "CFD Modeling of the Vorsana McCutchen Processor," Vorsana Inc., May 25, 2012 – Aug. 25, 2012, \$36,023.
- PI and leading organization, "Collaborative Research: Simulation Based Design for Deep Water Offshore Wind Turbines Including Wave Loads and Motions," U.S. National Science Foundation, Division of Chemical, Bioengineering, Environmental, and Transport Systems, Award #1066873, \$200,731

awarded at Tuskegee (May-Dec. 2011); \$118,998 sub-awarded to University of Idaho (Dec. 2011 – Apr. 30, 2015).

PI, “Transition CFDShip-Iowa to Create Ship Hydrodynamics Program,” Office of Naval Research and the University of Iowa, 2009–2011, \$30,500.

Co-PI, (PI: L. Burge; other Co-PIs: H. Aglan, V. Moore), “Curriculum Development: Application for Learning, Development and Leadership,” Congressionally-Directed Projects, Grant P116Z090025, 09/01/2009 – 08/31/2010, \$190,000.

PI, “Developing Streamlined Version of CFDShip-Iowa-V4,” Office of Naval Research and the University of Iowa, 2008 – 2009, \$50,290.

Co-PI, (PI: F. Stern), “6DOF Viscous Ship Hydrodynamics,” Office of Naval Research, (N00014-01-1-0073), 2000 – 2009, \$4,227,643.

Co-PI, (PI: F. Stern), “URANS/DES Code Development for Ship Hydrodynamics Simulation Based Design: CFDSHIP-IOWA,” Office of Naval Research, (N00014-06-1-0420), 2006 – 2009, \$6,589,048.

Co-PI, (PI: F. Stern), “Integration of Simulation Technology into Undergraduate Engineering Courses and Laboratories,” U.S. National Science Foundation, Course, Curriculum and Laboratory Improvement – Educational Materials Development Program Award #0126589, 2002 – 2006, \$395,090.

#### **Additional Funding (gift/donation)**

Percussionaire Corp., \$26,433 (2016), \$44,000 (2017)

#### **Honors and Awards:**

2016, 3<sup>rd</sup> Place in Poster Session, PacTrans Student Conference, Oct. 15

2015, Outstanding Young Faculty Award, College of Engineering, University of Idaho

2010, one of fifty-three of the nation’s most innovative young engineering educators invited to attend the 2<sup>nd</sup> Frontiers of Engineering Education Symposium, U.S. National Academy of Engineering.

#### **SERVICE:**

##### **Major Committee Assignments:**

2017, Co-Chairman for Session “Micro-Nano Heat/Mass Transfer,” the 4<sup>th</sup> International Workshop on Heat Transfer (IWHT), Las Vegas, Nevada, USA, April 2-5, 2017.

2017, Co-Chairman for Session “Multiphase Heat/Mass Transfer,” the 4<sup>th</sup> International Workshop on Heat Transfer (IWHT), Las Vegas, Nevada, USA, April 2-5, 2017.

2017, Search Committee Chairman for one thermal-fluid faculty, Department of Mechanical Engineering, College of Engineering, University of Idaho

2017, Member of Technical Program Committee (TPC) of the 27<sup>th</sup> International Ocean and Polar Engineering conference, San Francisco, California, June 25 – 30, 2017.

2016, Member of “The 7<sup>th</sup> Renewable Energy & Environment Symposium,” The 26<sup>th</sup> Annual International Ocean and Polar Engineering Conference Rhodes, Greece, June 26–July 2, 2016

- 2016, Member of Technical Program Committee (TPC) of the International Society of Offshore and Polar Engineers (ISOPE) annual conference, Rhodes (Rodos), Greece, June 26 – July 1, 2016.
- 2015, Member of Technical Program Committee (TPC) of the International Society of Offshore and Polar Engineers (ISOPE) annual conference, Kona, Big Island, Hawaii, USA, June 21 – 26, 2015.
- 2015, Chairman for Session “REES Offshore Wind Turbine IX: Wind & Wave Loading,” the International Society of Offshore and Polar Engineers (ISOPE) annual conference, Kona, Big Island, Hawaii, USA, June 21 – 26, 2015.
- 2013-16, Information Technology Committee, University of Idaho
- 2013-16, Graduate Council, University of Idaho
- 2015 (Fall), College Curriculum Committee, College of Engineering, University of Idaho
- 2015-present, Graduate Committee of Mechanical Engineering Department, University of Idaho
- 2015, Search Committee for Chairman of Department of Mechanical Engineering, College of Engineering, University of Idaho
- 2015, Search Committee for two thermal-fluid faculty, Department of Mechanical Engineering, College of Engineering, University of Idaho
- 2014, Search Committee for Associate Engineer, Department of Mechanical Engineering, College of Engineering, University of Idaho
- 2012, Tenure Review Committee, Department of Mechanical Engineering, College of Engineering, University of Idaho
- 2009-10, Accreditation Committee, College of Engineering, Architecture & Physical Sciences, Tuskegee University

**Professional and Scholarly Organizations:**

- Member, Editorial Board of Heliyon – Elsevier Journal
- Executive Member, Editorial Board of the Journal of Hydrodynamics (Ser. B), 2015 – present
- Lead Guest Editor, Wind Turbine Simulations and Validation, special issue in Modelling and Simulation in Engineering, 2016
- Invited Member, Editorial Board of the Journal of Hydrodynamics (Ser. B), 2014 – 2015
- American Society of Engineering Education (ASEE), 2003-2004; 2011 – present
- American Society of Mechanical Engineers (ASME), 2012 – present
- The International Society of Offshore and Polar Engineers, 2013 – present

**Outreach Service:**

**Classes, Workshops, Seminars, Share Fairs and Tours Organized:**

- Xing, T., “Introduction to Fluid Mechanics and Computational Fluid Dynamics,” lecture given at

Moscow High School, Idaho, 2013.

**Interview Articles:**

Elizabeth Rudd, "Supercomputer to the Rescue," Lewiston Tribune, March 17, 2014.

**Review Activities:**

ASEE Annual Conference

ASME Journal of Fluids Engineering

ASME Journal of Solar Energy Engineering

Chemical Engineering Education

Computers & Fluids

DOE NEUP Proposal

Energies

Heat Transfer Engineering

IEEE Transactions on Industrial Electronics

International Journal of Numerical Methods in Fluids

International Journal of Numerical Modeling: Electronic Networks, Devices and Fields

Journal of Computational Physics

Journal of Engineering and Manufacturing Technology

Journal of Fluid Mechanics

Journal of Hydrodynamics

Journal of Marine Science & Technology

Journal of Marine Science and Engineering

Journal of Ocean and Wind Energy

Journal of Process Mechanical Engineering

Journal of Ship Research

Journal of Turbulence

Journal of Wind Engineering & Industrial Aerodynamics

Mathematical Problems in Engineering

Ocean Engineering

Open Mechanical Engineering Journal

Science Bulletin

Judge for ISOPE 2015 Best Student Paper

Wind Energy

Wind and Structures, an international Journal

2015 World Maritime Technology Conference papers

ISOPE Annual Conference Papers: 2015, 2016, 2017

**International Collaboration:**

Visited Xi'an Jiaotong University on behalf of Dean Larry Stauffer, 2013.

Translator for reviewing and correcting the Chinese version of the agreement of Cooperation and Exchange between Wenzheng College of Soochow University, China and Board of Trustees of the University of Idaho Acting for and on behalf of the University of Idaho, USA, 2014.

Served as the translator for the Dean of College of Engineering (Dr. Larry Stauffer) and the Electrical and Computer Engineering Department Chairman (Dr. Fred Barlow)'s visit to China on developing the 3+1 and/or 3+1+1 programs between Chinese Universities and University of Idaho, 2014.

**PROFESSIONAL DEVELOPMENT:**

**Teaching:**

Co-author of a paper, 2015 ASEE 122<sup>nd</sup> Annual Conference & Exposition, Washington Convention Center, Seattle, June 14-17, 2015

Presenter, "118<sup>th</sup> ASEE Annual Conference & Exposition," Vancouver, Canada, June 26-29, 2011

Participant, ITN2 Conference, "Advancing the Learning Environment through Technology," Tuskegee University Kellogg Conference Center, March 30-31, 2011.

Participant, "Putting the Pieces Together," Academic advising workshop, Tuskegee University, Mar. 23 2011,

Participant, Assessment of Student Learning Outcomes: "How do we know when learning occurs?" Tuskegee University, March 19, 2010

Participant, "Use of Learning Technologies in Instruction," Tuskegee University, January 22, 2010.

Participant, Follow-up with Dr. Uri's Presentation: "A Systems Approach to Teaching and Learning: Developing Best Practices," Tuskegee University, December 10, 2009.

Participant, Academic Advising Workshop: "The impact of Effective Advising on Student Learning Outcomes," Tuskegee University, Nov. 13, 2009.

Participant, "Curriculum Development, Accreditation, and Assessment Workshop," Tuskegee University, Oct. 26 2009.

Presenter, “URANS/DES Code Development for Ship Hydrodynamics Simulation Based Design: CFDSHIP-IOWA,” IIHR-Hydroscience & Engineering, The University of Iowa, July 27 to 31 2009.

Presenter, “Integration of Simulation Technology into Undergraduate Engineering Courses and Laboratories,” ASEE Annual Conference, Nashville, TN, June 22-25, 2003.

**Scholarship:**

Presenter, 2015 CAES Materials, Modeling, Simulation and Visualization Workshop, McCall, Idaho, USA, May 13-14, 2015.

Presenter, ISOPE-2015 Annual Conference, Kona, Big Island, Hawaii, USA, June 21-26, 2015

Co-author of a paper, 5<sup>th</sup> World Maritime Technology Conference, Rhode Island Convention & Omni Hotel, Providence, Rhode Island, Nov. 3-7, 2015

Keynote Presenter, the 26<sup>th</sup> Conference on Hydrodynamics & 13<sup>th</sup> National Congress on Hydrodynamics, Qingdao, China, August 22-27, 2014.

Presenter, ASME 2014 Verification and Validation Symposium, Las Vegas, Nevada, USA, May 7-9, 2014.

Presenter with student, ASME 2013 Fluids Engineering Division Summer Meeting, Incline Village, Nevada, USA, July 7 – 11, 2013

Presenter with student, the 23<sup>rd</sup> International Ocean and Polar Engineering Conference, Alaska, USA, June 30 – July 5, 2013

Participant, the 65<sup>th</sup> Annual Fall DFD meeting of American Physical Society, San Diego, California, USA, Nov 18-20, 2012.

Participant, “Computer Code Validation for Offshore Wind System Modeling,” Millennium Harvest House Hotel, Boulder, Colorado, May 15-16, 2012.

Presenter, “The 2<sup>nd</sup> Annual CAES Workshop on Modeling, Simulation, and Visualization,” Grove Hotel - Boise, Idaho, September 8-9, 2011.

Participant, 6<sup>th</sup> OpenFOAM Workshop, Penn State University, June 13-16 2011.