SUMMARY OF ACTIVITIES

IIHR—HYDROSCIENCE & ENGINEERING

THE UNIVERSITY OF IOWA

COLLEGE OF ENGINEERING

IOWA CITY, IOWA  52242

USA

for the period

July 1, 2005 – June 30, 2006
Dear Friends,

It is with great pride that we share with you some of the achievements at IIHR during the past year. IIHR’s fiscal year 2006 proved very successful, and it was a record year for grants and contracts. From July 1, 2005, to June 30, 2006, IIHR’s research was funded by 79 grants and contracts from 43 different funding sources, which led to six Ph.D. and six M.S. degrees, and dozens of publications and presentations. Details can be found throughout this Summary of Activities.

Research capabilities, instrumentation, and funded projects at the institute continue to grow. Throughout the 85-year history of IIHR, hydroscience research has always been critical and integral to the success of the institute. Research collaborations are continuously being developed and established between IIHR and world renowned individuals and organizations. IIHR students and researchers have greatly benefited from these collaborations and have gone on to become very successful in the global marketplace.

Two prestigious awards were received this year by remarkable IIHR faculty members. Dr. Krishnan Chandran received The University of Iowa College of Engineering’s Faculty Excellence Award for Research in May 2006. Dr. Chandran joined The University of Iowa faculty in 1978, and is an international leader in biofluid dynamics with application to the human cardiovascular system. Dr. Tatsuaki Nakato was awarded the 2006 Hydraulic Structures Medal by the American Society of Civil Engineers, also in May 2006, for “significant contributions to the advancement of the art and science of hydraulic engineering as applied to hydraulic structures.”

IIHR expended a total of $7,945,812 during FY 2006 in pursuit of its education and research mission. Of this amount, $4,825,521 was expended for research projects funded through grants and contracts proposed and administered by IIHR staff, and $2,652,529 was expended for IIHR’s operation, and laboratory and equipment maintenance. The remaining $467,762 was invested in new equipment.

The IIHR staff looks forward to another banner year in 2006-2007. Please do not hesitate to call on any of the IIHR staff if we can be of assistance to you or your organization.

Best wishes,

Larry J. Weber
IIHR Director
Fred Stern also hosted the International Collaboration on Complementary Computational Fluid Dynamics & Experimental Fluid Dynamics & Uncertainty Analysis Summer Workshop on July 19, 2005.

Walter Illman, Assistant Professor, IIHR, and Pedro Alvarez, George R. Brown Professor of Civil and Environmental Engineering at Rice University and the President of the Association of Environmental Engineering and Science Professors published: *Bioremediation and Natural Attenuation*. 

Dr. Krishnan Chandran received the UI College of Engineering’s Faculty Excellence Award for Research

Dr. Tatsuaki Nakato was awarded the 2006 Hydraulic Structures Medal by the American Society of Civil Engineers

Workshop on Dissemination of CFD Educational Interface for Engineering Courses and Laboratories held July 14, 2005, at the C. Maxwell Stanley Hydraulics Laboratory, hosted by Professor Fred Stern.
### Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abbreviations</td>
<td>4</td>
</tr>
<tr>
<td>Active Sponsored Research Projects</td>
<td>5</td>
</tr>
<tr>
<td>Monographs</td>
<td>8</td>
</tr>
<tr>
<td>Technical Reports</td>
<td>9</td>
</tr>
<tr>
<td>Limited Distribution Reports</td>
<td>10</td>
</tr>
<tr>
<td>Journal Articles</td>
<td>11</td>
</tr>
<tr>
<td>Papers Presented at Conferences and Published in Proceedings</td>
<td>14</td>
</tr>
<tr>
<td>Presentations at Conferences</td>
<td>18</td>
</tr>
<tr>
<td>Book Publications</td>
<td>21</td>
</tr>
<tr>
<td>Other Publications</td>
<td>21</td>
</tr>
<tr>
<td>Discussions</td>
<td>21</td>
</tr>
<tr>
<td>Other Faculty and Staff Presentations</td>
<td>22</td>
</tr>
<tr>
<td>Ph.D. Theses Accepted</td>
<td>23</td>
</tr>
<tr>
<td>M.S. Theses Accepted</td>
<td>23</td>
</tr>
<tr>
<td>Recognitions / International and National</td>
<td>24</td>
</tr>
<tr>
<td>Recognitions / State and Local</td>
<td>28</td>
</tr>
<tr>
<td>Seminar Presentations</td>
<td>30</td>
</tr>
<tr>
<td>Senior Staff</td>
<td>33</td>
</tr>
<tr>
<td>Graduate Students / Assistants and Fellows</td>
<td>34</td>
</tr>
<tr>
<td>Advisory Board</td>
<td>36</td>
</tr>
<tr>
<td>Abbreviations</td>
<td>Full Form</td>
</tr>
<tr>
<td>---------------------------------------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>AFOSR</td>
<td>Air Force Office of Scientific Research</td>
</tr>
<tr>
<td>AGU</td>
<td>American Geophysical Union</td>
</tr>
<tr>
<td>AIChE</td>
<td>American Institute of Chemical Engineers</td>
</tr>
<tr>
<td>AMS</td>
<td>American Meteorological Society</td>
</tr>
<tr>
<td>ASCE</td>
<td>American Society of Civil Engineers</td>
</tr>
<tr>
<td>ASME</td>
<td>American Society of Mechanical Engineers</td>
</tr>
<tr>
<td>CFD</td>
<td>Computational Fluid Dynamics</td>
</tr>
<tr>
<td>CGRER</td>
<td>UI Center for Global and Regional Environmental Research</td>
</tr>
<tr>
<td>CLEANER</td>
<td>Collaborative Large-scale Engineering Analysis Network for Environmental Research</td>
</tr>
<tr>
<td>COE</td>
<td>U.S. Army Corps of Engineers</td>
</tr>
<tr>
<td>CUAHSI</td>
<td>Consortium of Universities for the Advancement of Hydrologic Sciences, Inc.</td>
</tr>
<tr>
<td>DAEC</td>
<td>Duane Arnold Energy Center</td>
</tr>
<tr>
<td>DHHS</td>
<td>Department of Health and Human Services</td>
</tr>
<tr>
<td>DUP</td>
<td>Du Page County</td>
</tr>
<tr>
<td>ENSR</td>
<td>ENSR Corporation</td>
</tr>
<tr>
<td>EPA</td>
<td>Environmental Protection Agency</td>
</tr>
<tr>
<td>EWRI</td>
<td>Environmental &amp; Water Resources Institute</td>
</tr>
<tr>
<td>EXELON</td>
<td>Exelon Generation Co., LLC</td>
</tr>
<tr>
<td>FMG</td>
<td>Factory Mutual G, FM Global</td>
</tr>
<tr>
<td>FHA</td>
<td>Federal Highway Administration</td>
</tr>
<tr>
<td>FWEC</td>
<td>Foster Wheeler Environmental Corp.</td>
</tr>
<tr>
<td>GTT</td>
<td>Gold T-Tech</td>
</tr>
<tr>
<td>H&amp;S</td>
<td>Hazen and Sawyer</td>
</tr>
<tr>
<td>HCA</td>
<td>Hungry Canyons Alliance</td>
</tr>
<tr>
<td>HEPEX</td>
<td>Hydrologic Ensemble Prediction Experiment</td>
</tr>
<tr>
<td>IAHR</td>
<td>International Association of Hydraulic Engineering and Research</td>
</tr>
<tr>
<td>IDNR</td>
<td>Iowa Department of Natural Resources</td>
</tr>
<tr>
<td>IDOT</td>
<td>Iowa Department of Transportation</td>
</tr>
<tr>
<td>IEC</td>
<td>Iowa Energy Center</td>
</tr>
<tr>
<td>IHRB</td>
<td>Iowa Highway Research Board</td>
</tr>
<tr>
<td>JS</td>
<td>Johnson Screens</td>
</tr>
<tr>
<td>KAIST</td>
<td>Korea Advanced Institute of Science and Technology</td>
</tr>
<tr>
<td>KSCE</td>
<td>Korean Society of Civil Engineers</td>
</tr>
<tr>
<td>MLA</td>
<td>McKenna, Long, &amp; Aldridge LLP</td>
</tr>
<tr>
<td>MWG</td>
<td>Midwest Generation EME, LLC</td>
</tr>
<tr>
<td>NASA</td>
<td>National Aeronautics and Space Administration</td>
</tr>
<tr>
<td>NATO</td>
<td>North Atlantic Treaty Organisation</td>
</tr>
<tr>
<td>NIH</td>
<td>National Institutes of Health</td>
</tr>
<tr>
<td>NGPC</td>
<td>Nebraska Game and Parks Commission</td>
</tr>
<tr>
<td>NHCRP</td>
<td>National Highway Cooperative Research Program</td>
</tr>
<tr>
<td>NOAA</td>
<td>National Oceanic and Atmospheric Administration</td>
</tr>
<tr>
<td>NSF</td>
<td>National Science Foundation</td>
</tr>
<tr>
<td>NWS</td>
<td>National Weather Service</td>
</tr>
<tr>
<td>ONR</td>
<td>Office of Naval Research</td>
</tr>
<tr>
<td>PUD-GC</td>
<td>Public Utility District of Grant County</td>
</tr>
<tr>
<td>SAME</td>
<td>Society of American Military Engineers</td>
</tr>
<tr>
<td>SCI</td>
<td>Stanley Consultants, Inc.</td>
</tr>
<tr>
<td>SFWMHD</td>
<td>South Florida Water Management District</td>
</tr>
<tr>
<td>SNAME</td>
<td>Society of Naval Architects and Marine Engineers</td>
</tr>
<tr>
<td>TG</td>
<td>TeraGrid</td>
</tr>
<tr>
<td>TMAGC</td>
<td>TaylorMade-Adidas Golf Company, Inc.</td>
</tr>
<tr>
<td>TTI</td>
<td>Tetra Tech, Inc.</td>
</tr>
<tr>
<td>UCBerkeley</td>
<td>University of California, Berkeley</td>
</tr>
<tr>
<td>UI</td>
<td>The University of Iowa</td>
</tr>
<tr>
<td>UI-UC</td>
<td>University of Illinois, Urbana-Champaign</td>
</tr>
<tr>
<td>UNESCO</td>
<td>United Nations Educational, Scientific and Cultural Organization</td>
</tr>
<tr>
<td>USACE</td>
<td>U.S. Army Corps of Engineers, Rock Island</td>
</tr>
<tr>
<td>USDA</td>
<td>U.S. Department of Agriculture</td>
</tr>
<tr>
<td>USDAAF</td>
<td>U.S. Department of Defense, Air Force</td>
</tr>
<tr>
<td>USDI-FWS</td>
<td>U.S. Department of Interior, Fish &amp; Wildlife Service</td>
</tr>
<tr>
<td>USDAOA</td>
<td>U.S. Department of Army</td>
</tr>
<tr>
<td>USGS</td>
<td>U.S. Geological Survey</td>
</tr>
</tbody>
</table>
# Active Sponsored Research Projects

<table>
<thead>
<tr>
<th>Title</th>
<th>Sponsor</th>
<th>Investigator(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>* MWH Americas, Inc. Silver Lake Flood Litigation Retention Agreement</td>
<td>MWH</td>
<td>Weber</td>
</tr>
<tr>
<td>** Test Program, ABS Pumps vs. OCWD</td>
<td>ABS Pumps</td>
<td>Weber</td>
</tr>
<tr>
<td>Development and Application of a 3-Dimensional Cartesian Grid Method for Investigation of Impact Response of Energetic Materials</td>
<td>AFOSR</td>
<td>Udaykumar</td>
</tr>
<tr>
<td>** Prediction and Analysis of Material Response to Impact and Shock Loading Using a Sharp-Interface Eulerian Methodology</td>
<td>AFOSR</td>
<td>Udaykumar</td>
</tr>
<tr>
<td>Edit Center for Global and Environmental Research Newsletter</td>
<td>CGRER</td>
<td>Mutel</td>
</tr>
<tr>
<td>Water Quality-Coralville Reservoir for November 2002-2006</td>
<td>COE</td>
<td>Nakato, Schnoor</td>
</tr>
<tr>
<td>*** Cedar River Spur Dikes (Wing Dams) Design Study</td>
<td>DAEC</td>
<td>Odgaard</td>
</tr>
<tr>
<td>Fluid-Structure Simulation for Prosthetic Heart Valves</td>
<td>DHHS</td>
<td>Chandran, Lai</td>
</tr>
<tr>
<td>* Multiscale Simulation of Gas Flow Distribution in the Human Lung</td>
<td>DHHS</td>
<td>Lin</td>
</tr>
<tr>
<td>Image and Model Based Analysis of Lung Disease</td>
<td>NIH-BRP</td>
<td>Lin</td>
</tr>
<tr>
<td>* Geometric Reconstruction of Human Lung Models</td>
<td>UI</td>
<td>Lin</td>
</tr>
<tr>
<td>* Multiscale Simulation of Pulmonary Airflow</td>
<td>TG</td>
<td>Lin</td>
</tr>
<tr>
<td>General Maintenance and Support of the PVSTATS Computer Program</td>
<td>DUP</td>
<td>Bradley</td>
</tr>
<tr>
<td>* Estimation of Spatial Flooding Patterns for Extreme Rainstorms in the U.S.</td>
<td>FMG</td>
<td>Bradley</td>
</tr>
<tr>
<td>Numerical Model Study of McNary Dam Forebay Temperature Improvements</td>
<td>FWEC</td>
<td>Constantinescu, Weber</td>
</tr>
<tr>
<td>*** Flow Loop Testing of Ultrasound Emitting Mechanical Heart Valves</td>
<td>GTT</td>
<td>Chandran, Muste</td>
</tr>
<tr>
<td>* Physical Model Study of the Clintondale Pumping Station</td>
<td>H&amp;S</td>
<td>Nakato</td>
</tr>
<tr>
<td>** Field Investigation of the Shallow Habitat in the Fremont and Otoe Counties of the Missouri River in Iowa and Nebraska</td>
<td>IDNR</td>
<td>Papanicolaou</td>
</tr>
<tr>
<td>* The Effects of Headcut and Knickpoint Propagation on Bridges in Iowa</td>
<td>IDOT</td>
<td>Papanicolaou</td>
</tr>
<tr>
<td>Evaluation of Design-Flood Frequency Methods for Iowa Streams</td>
<td>IDOT</td>
<td>Bradley, Kruger</td>
</tr>
<tr>
<td>** A Guide for Monitoring and Protecting Bridge-Waterways Against Scour</td>
<td>IDOT</td>
<td>Ettema, Muste, Nakato, Papanicolaou</td>
</tr>
<tr>
<td>** Sediment Composite Source Tracking in Clear Creek Watershed</td>
<td>IDOT</td>
<td>Papanicolaou</td>
</tr>
<tr>
<td>** Field and Laboratory Investigation of Hydraulic Structures Facilitating Fish Abundance and Passage Through Bridges in Western Iowa Streams</td>
<td>IDOT</td>
<td>Ettema, Muste, Papanicolaou</td>
</tr>
<tr>
<td>** Field Testing of Abrasive Delivery Systems in Winter Maintenance</td>
<td>IDOT</td>
<td>Nixon</td>
</tr>
</tbody>
</table>

* Research projects initiated between 07/01/2005 - 06/30/2006
** Research projects completed between 07/01/2005 - 06/30/2006
Active Sponsored Research Projects (continued)

* Minimizing Home Energy Use Through Optimization of the Wood-Soy Foam Building Envelope
  IEC Just

Implementation of the Water Quality BMP and Design Specification Components in the Iowa Stormwater Runoff Control Interactive Manual
  IHRB Muste

Design Procedures and Field Monitoring of Submerged Barbs for Streambank Protection
  IHRB Muste, Papanicolaou

** Economics of Using Calcium Chloride vs. Sodium Chloride for Deicing/Anti-Icing
  IHRB Nixon

** Iowa Stormwater Runoff Control
  IHRB Muste

* Laboratory Tests on the Underdrain Lateral Prototype - Scottsdale CAP
  JS Weber

** Field Monitoring Program Regarding Ice Processes Associated with the Mill-Bull Tunnel
  MLA Ettema, Muste

* Thermal Model Data Acquisition System Service & Maintenance for Joliet Joliet Station
  MWG Bradley, Wilson

Characterization of the Spatial Variability of Rainfall From Remote Sensing: Graduate Fellowship
  NASA Gebremichael, Krajewski

** Impact of Field-Scale Heterogeneity in Surface Moisture and Vegetation Cover on Regional-Scale Fluxes: From Land-Atmosphere Modeling and Remote Sensing Perspectives
  NASA Eichinger

* A Prototype Remote Sensing Validation Site: Towards a Multi-Variable Approach to Validating and Scaling Remotely-Sensed Observations of the Water Cycle
  NASA Krajewski

** Field Investigation of the Shallow Habitat in the Fremont and Otoe Counties of the Missouri River in Iowa and Nebraska
  NGPC Papanicolaou

Prediction of Scour at Bridge Abutments
  NHCRP Ettema, Muste, Nakato

** Countermeasures to Protect Bridge Abutments from Scour
  NHCRP Ettema

** Forecast Technology Integration for Water Resources Management
  NOAA Bradley

* Sampling Support and Data Analysis of NOAA Tall Tower and Aircraft Measurements in Iowa
  NOAA Stanier

** Towards Probabilistic Quantitative Precipitation WSR-88D Algorithms: Preliminary Studies and Problem Formulation
  NOAA Krajewski, Ciach

SEI (EAR): Collaborative Research: Adaptive Fusion of Stochastic Information for Imaging Fractured Vadose Zones
  NSF Illman, Kruger

* Research projects initiated between 07/01/2005 - 06/30/2006

** Research projects completed between 07/01/2005 - 06/30/2006
<table>
<thead>
<tr>
<th>Title</th>
<th>Sponsor</th>
<th>Investigator(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collaborative Research: River Stage Tomography for Automatic Characterization of Fluxes Between Surface Groundwater Reservoirs: A Pilot Study</td>
<td>NSF</td>
<td>Illman</td>
</tr>
<tr>
<td>** Collaborative Research: Integration of Simulation Technology Into Undergraduate Engineering Courses and Laboratories</td>
<td>NSF</td>
<td>Stern, Xing, Muste</td>
</tr>
<tr>
<td>* Meteorological Properties from Elastic Lidar Measurements</td>
<td>NSF</td>
<td>Eichinger</td>
</tr>
<tr>
<td>Collaborative Research: Small-Scale Variability of Rainfall: Experimental Studies with Implications for Rainfall Estimation</td>
<td>NSF</td>
<td>Krajewski</td>
</tr>
<tr>
<td>** Large-Scale Environmental Research and Analysis Network of the Upper Mississippi River Basin (UMRB): Hydrology, Sediments, Nutrients and Emerging Chemical Contaminants</td>
<td>NSF</td>
<td>Bradley, Krajewski, Kruger, Muste, Nakato, Odgaard, Papanicolaou, Schnoor, Weber</td>
</tr>
<tr>
<td>** Collaborative Research: An Optimality Principle of Evaporation Over the Land Surface</td>
<td>NSF</td>
<td>Eichinger, Krajewski</td>
</tr>
<tr>
<td>Hydraulic and Geomorphic Controls on the Evolution of Cluster Bedforms in Gravel-Bed Streams</td>
<td>NSF</td>
<td>Papanicolaou</td>
</tr>
<tr>
<td>DNAPL Source Zone Characterization by the Stochastic Fusion of Information</td>
<td>NSF</td>
<td>Illman</td>
</tr>
<tr>
<td>ITR: Collaborative Research: A Comprehensive Framework for Use of NEXRAD Data in Hydrometeorology and Hydrology</td>
<td>NSF</td>
<td>Bradley, Krajewski, Kruger</td>
</tr>
<tr>
<td>Development of Empirically Based Methodology for Comprehensive Verification of Radar Rainfall Products</td>
<td>NSF</td>
<td>Ciach</td>
</tr>
<tr>
<td>Collaborative Research: Testing a Dynamical-Hortonian Scaling Theory for Flood Events on Whitewater Basin, Kansas</td>
<td>NSF</td>
<td>Krajewski, Kruger</td>
</tr>
<tr>
<td>* Elastic Lidar Measurements in MIRAGE-Mex</td>
<td>NSF</td>
<td>Eichinger</td>
</tr>
<tr>
<td>Collaborative Research: Data Assimilation of Dual Doppler Lidar Observations of the Urban Boundary Layer</td>
<td>NSF</td>
<td>Lin</td>
</tr>
<tr>
<td>Diagnostic Verification of 6-90 Day Ensemble Streamflow Predictions for AHPS</td>
<td>NWS</td>
<td>Bradley</td>
</tr>
<tr>
<td>** Large Eddy Simulation of Air Flow Around the Air-Sea Interaction Tower</td>
<td>ONR</td>
<td>Lin</td>
</tr>
<tr>
<td>* Integration of Structural Loads Capabilities into CFDSHIP-IOWA</td>
<td>ONR</td>
<td>Carrica</td>
</tr>
<tr>
<td>6DOF Viscous Ship Hydrodynamics</td>
<td>ONR</td>
<td>Longo, Stern, Wilson</td>
</tr>
<tr>
<td>* Computational Hydrodynamic Tools for HSSL Ships</td>
<td>ONR</td>
<td>Carrica, Stern, Wilson</td>
</tr>
<tr>
<td>Fish Passage Concepts for Wanapum Forebay General Model for Grant County PUD</td>
<td>PUD-GC</td>
<td>Constantinescu, Weber</td>
</tr>
</tbody>
</table>

* Research projects initiated between 07/01/2005 - 06/30/2006
** Research projects completed between 07/01/2005 - 06/30/2006
<table>
<thead>
<tr>
<th>Title</th>
<th>Sponsor</th>
<th>Investigator(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>*** Physical Model Tests of Pump Station Design Criteria</td>
<td>SCI</td>
<td>Nakato, Odgaard</td>
</tr>
<tr>
<td>* Davenport West Side Diversion Tunnel</td>
<td>SCI</td>
<td>Odgaard</td>
</tr>
<tr>
<td>* Evaluation of Boat-Mounted ADCP Flow Disturbance by LES</td>
<td>SFWMD</td>
<td>Constantinescu</td>
</tr>
<tr>
<td>** Computational Fluid Dynamics Investigation of Flow Over an Array</td>
<td>TMAGC</td>
<td>Constantinescu</td>
</tr>
<tr>
<td>of Dimples</td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Forebay Computational Fluid Dynamics Modeling to Support Fish Passage at Lower Granite, Ice Harbor and McNary Dams; Task Order No. 4</td>
<td>TTI</td>
<td>Constantinescu, Li,</td>
</tr>
<tr>
<td>/</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Immobilization of Radionuclides Through Anaerobic Biooxidation of Fe(II)</td>
<td>UCBerkeley</td>
<td>Scherer</td>
</tr>
<tr>
<td>** Development of Large Eddy Simulation and Parallel Computing as a Method for Investigating and Simulating Environmental Flow and Mixing Processes</td>
<td>UI</td>
<td>Constantinescu</td>
</tr>
<tr>
<td>* Coalition for Creation of Cleaner Project Office (C3PO)</td>
<td>UI-UC</td>
<td>Schnoor</td>
</tr>
<tr>
<td>Application of CFD for Modeling Design and Analysis of Hydropower</td>
<td>USACE</td>
<td>Weber</td>
</tr>
<tr>
<td>Facilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>** Revision and Updating of the NRCS National Engineering Handbook,</td>
<td>USDA</td>
<td>Ettema, Nakato</td>
</tr>
<tr>
<td>Section 15, Chapter 8, &quot;Agricultural Pumping Plants&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Assessment of Turbulent Exchanges Around Livestock Facilities Using Lidar Technology</td>
<td>USDA</td>
<td>Eichinger</td>
</tr>
<tr>
<td>* First Estimation of the Runoff Curve Number in the State of Iowa</td>
<td>USDA</td>
<td>Elhakeem, Papanicolaou</td>
</tr>
<tr>
<td>via Direct Rainfall Simulator Measurements</td>
<td></td>
<td></td>
</tr>
<tr>
<td>* High-Accuracy, Efficient Eulereian Methodology for 3-Dimensional</td>
<td>USDD-AF</td>
<td>Udaykumar</td>
</tr>
<tr>
<td>High-Speed Material Response</td>
<td></td>
<td></td>
</tr>
<tr>
<td>** Characterization of Coarse Sediment Inputs From Small Tributaries</td>
<td>USDI-FWS</td>
<td>Nakato</td>
</tr>
<tr>
<td>Related to Stable Mussel Habitats</td>
<td></td>
<td></td>
</tr>
<tr>
<td>* A Helicopter Observation Platform (HOP) for Measurements of Aerosol Characteristics and Transport</td>
<td>USDOA</td>
<td>Eichinger</td>
</tr>
<tr>
<td>Support for the UMRS Navigation and Ecosystem Sustainability Program</td>
<td>USDOA</td>
<td>Weber</td>
</tr>
<tr>
<td>** Hydraulic and Geomorphic Controls on the Evolution of Cluster</td>
<td>USGS</td>
<td>Papanicolaou</td>
</tr>
<tr>
<td>Bedforms In Gravel-Bed Streams</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thermal Models at Braidwood, Dresden, LaSalle, and the Quad Cities Stations</td>
<td>EXELON</td>
<td>Wilson, Bradley</td>
</tr>
</tbody>
</table>

**Monographs**


* Research projects initiated between 07/01/2005 - 06/30/2006
** Research projects completed between 07/01/2005 - 06/30/2006
Technical Reports


Limited Distribution Reports


331. “ABS Pumps vs. Orange County Water District: Pressure Tests on Cable Splices From the Santiago Pits Pumping Station,” P.E. Haug and D. DeJong, February 2006.


Journal Articles


Journal Articles (continued)


**Papers Presented at Conferences and Published in Proceedings**


Papers Presented at Conferences and Published in Proceedings (continued)


Papers Presented at Conferences


Papers Presented at Conferences (continued)


Papers Presented at Conferences (continued)


Book Publications


Other Publications


Discussions

Other Faculty and Staff Presentations


Illman, W.A., “Pneumatic Tests and Tomography for Characterizing Fractured Vadose Zone,” Invited Talk, Department of Geological Sciences, Texas A&M University, College Station, TX, May 4, 2006.


Ph.D. Theses Accepted


M.S. Theses Accepted


Awards, Chairs, Appointment to Committees/Editorial Boards, and Participation in Conferences

International and National Recognitions

NEW IN 2005 – 2006

George Constantinescu
Secretary, ASCE-EWRI Eco-Hydraulics Technical Committee, 2006-present

Keri Hornbuckle
Panelist, National Science Foundation Bio/Environmental Engineering Proposal Review, February 2006

Craig Just
Associate Editor, *Journal of Environmental Quality*, 2003-present
Board Member, Aquaya Institute, 2005

Ching-Long Lin
Member, Interagency Modeling and Analyst Group (IMAG) MultiScale Modeling (MSM) Consortium, 2005-present
Session Co-Chair, AMS 17th Symposium on Boundary Layers and Turbulence, San Diego, CA, May 2006

Marian Muste
Fulbright Senior Specialist, Mahasarakham University, Thailand (March-April 2006)
Guest Editor, Special Issue of the *Journal of Hydraulic Engineering*: Acoustic Instrumentation for River Measurements
Convener, XXXI IAHR Congress, Sub-Theme A: Hydroinformatics, Hydraulic Modelling, and Data: Competition or Integration, Seoul, Korea, September 2005

Tatsuaki Nakato

Thanos Papanicolaou
Member, 2006 International Conference on Fluvial Hydraulics – River Flow, 2006
Organizer, Special Session on Cyber Infrastructure Watershed Management Conference, Williamsburg, VA, July 19-22, 2005
Organizer, Session for IT HydroScience, 7th International Conference on Hydroscience and Engineering, September 10-13, 2006

Virendra C. Patel
Member, International Technical Committee, Turbine 99: ERCOFTAC Draft Tube Workshop, Projes Hydropower Center, Sweden, December 2005

Jerald Schnoor
Keynote Speaker, International Hazardous Waste Conference, Bangkok, Thailand, 2006-10-09

Charles Stanier
Guest Editor, Special Issue of the *Journal of Geophysical Research*, May 2006
International and National Recognitions (continued)

CARRIED OVER FROM PREVIOUS YEARS

A. Allen Bradley
Secretary, AGU Hydrology Section, Spring Meeting, 2004-2006
Member, Science Steering Group, HEPEx, 2004-present
Member, National Research Council Committee on USGS Water Research, 2001-present
Member, AGU Precipitation Committee, 1992-1993; 2000-present
Member, GEWEX Americas Prediction Project Science Advisory Group, 2002-present
Member, AGU Large-Scale Field Experimentation Committee, 1994-present

George Constantinescu
Member, ASCE-EWRI Computational Hydraulics Technical Committee, 2005-present
Member, ASCE-EWRI Eco-Hydraulics Technical Committee, 2005-present
Chair, ASCE-EWRI ‘Mass Exchange Processes Around In-Stream Structures for Habitat Restoration’ Task Committee, 2005-present
Member, IAHR Fluid Mechanics Committee, 2005-present

William Eichinger
Associate Editor, Water Resources Research, AGU, 1998-present

Robert Ettema
Chair of Technical Program, XXXIII Congress of IAHR, to be held in 2009, Vancouver, Canada, 2004-present
Member, Accreditation Review Team, Department of Civil & Environmental Engineering, The University of Auckland, New Zealand, 2005
Member, Organizing Committee, NATO Advanced Research Workshop on Extreme Hydrologic Events, Novosibirsk, Russia, 2005
Chair, Iowa Highway Research Board, 2003-present
Member, International Editorial Board, Korean Journal of Civil Engineering, 2001-present

Keri Hornbuckle
Associate Editor, ASCE Journal of Environmental Engineering, 2006-present
Board Member, Association of Environmental Engineering and Science Professors, 2006-present
Past President, International Association for Great Lakes Research, 2005-2006
Member, Science Committee for the NSF’s CLEANER Project, 2005-present
Associate Editor, Journal of Great Lakes Research, August 2001-present

Witold Krajewski
Chair, National Center for Hydrology Synthesis, Instrumentation Working Group, 2005
Member, World Meteorological Organization, Science Advisory Panel to the Global Precipitation Climatology Project, 1993-present
Member, Hydrologic Research Center, Board of Directors, 1993-present
Associate Editor, Journal of Hydrology, 1996-2005
Representative, Board of Directors, CUAHSI, 2001-present
Member, Global Precipitation Measurement, Working Group 1, 2002-present
Member, Science Advisor Committee, 8th International Conference on Precipitation, Vancouver, Canada, August 2004
U.S. Representative Member, International Group on Urban Rainfall, 1999-present
Member, Editorial Advisory Board to Research Trends: Current Topics in Meteorology, 1997-present

Anton Kruger
Member, UCAR Unidata Users Committee, 2002-2005

Ching-Long Lin
Member, American Meteorological Society, Boundary Layers and Turbulence Committee, 2003 - 2006
International and National Recognitions (continued)

Marian Muste  
Member, ASCE-EWRI, Hydraulic Measurements and Experimentation Technical Committee, May 2005-present  
Chair, IAHR, Hydraulic Instrumentation Section, 2000-present  
Member, IAHR-EWRI Oversight Committee, August 2000-present  
Member, UNESCO Work Group, “Data Requirements on Urban Water Management,” 2003-present

Tatsuaki Nakato  
Member, Board of Consultants for The Upper Mississippi River and Illinois Waterway Cumulative Effect Study for the U.S. Army Corps of Engineers, 1997-2005  
Member, ASCE EWRI Technical Committee on Hydraulic Measurements and Experimental Methods, 1994-present  
Member, IAHR Technical Committee on Hydraulic Structures, September 1999-2005

Wilfrid Nixon  
Member, Transportation Research Board (TRB) AH000 Operations and Maintenance Group, 2004-2007  
Chair, TRB Task Force AH010T Surface Weather and Transportation, 2005-2008  
Member, TRB AHD65 Winter Maintenance Committee, 2004-2007  
Member, Ice Performance Committee, International Towing Tank Conference, 1993-present  
U.S. Representative on Executive Committee of the Standing International Road Weather Conference, 2002-2008  
Member, American Association of State Highway Transportation Officials Winter Maintenance Policy Coordinating Committee (WMPCC), 1999-2008  
Member, TRB Committee A5001 Conduct of Research Committee, 1999-2006

A. Jacob Odgaard  
Member, National Cooperative Highway Research Program Panel, 1994-present

Thanos Papanicolaou  
Vice Chair, ASCE Sediment Transport Modeling Task Committee, Fluids Engineering Division, 2005-2007  
Member, Bedload Research International Cooperative (BRIC), 2005  
Vice Chair, ASCE/Engineering Mechanics Task Committee on Sediment Modeling, 2005  
Scientific Advisor/Representative, Pacific Northwest of the National Center for Regional Sediment Management Research Program, developed by the Waterways Experimentation Station, US Army Corps of Engineering, 2001-present  
Member, ASCE Fluids/Turbulent Committee, 1999-present  
Associate Editor, Journal of Hydraulic Engineering, 2003-present  
Chair, ASCE Sedimentation Committee, 2004-2006  
Chair, ASCE Hydraulics Probabilistic Modeling Committee, 2003-2005  
Vice Chair, ASCE Task Committee on Contaminated Sediments, 2002-2005  
Scientific Advisor, Alaska's Largest Fisheries Association CRAA, 2003-present  
Session Organizer, Sediment Transport, McMat2005, 2004-2005

Virendra C. Patel  
Member, Editorial Board, Computers & Fluids, 1990-present  
Member, Advisory Board, Water & Energy International Journal, 1995-present  
Member, Korea Advanced Institute of Science and Technology (KAIST) International Advisory Committee, 2001-present
International and National Recognitions (continued)

Jerald Schnoor
Member, NRC Committee on Mississippi River and Clean Water Act, 2005-present
Member, Institute of Medicine Roundtable on Rural and Agricultural America, 2005
Co-Director, NSF CLEANER Project Office, 2005-present
Member, National Research Council, Water Science and Technology Board, 2000-2005
Co-Editor, *Journal of Environmental Science and Technology*, 1992-present
Member, National Academy of Engineering, Environmental Engineering Committee, 2001-2005
Editorial Board, *Aquatic Sciences*, 2002-2005
Elected Member, National Academy of Engineering, 1999-present
Diplomat, American Academy of Environmental Engineers, 1990-present

Charles Stanier
Member, Board of Directors, Environmental Division of the AIChE, 2005-present
Director, Environmental Division, AIChE, March, 2005-present
Co-Chair, Heterogeneous Atmospheric Chemistry Technical Section, AIChE, 2005-present
Co-Chair, Atmospheric Aerosols Committee, American Association for Aerosol Research, October 2004-present

Fred Stern
Participant, U.S. Department of Defense's Computational Grand Challenge Program, 1996-present
Member, Editorial Committee, *Journal of Ship Research*, 1998-present
Member, Editorial Board, *Progress in CFD, An International Journal*, 2001-present
Member, Editorial Board, *Journal of Marine Sciences and Technology*, 1995-present
Panelist, SNAME: Flow Studies Panel (H-11), 1983-present
Panelist, SNAME: Propeller Hydrodynamics Panel (H-8), 1987-present
Secretary, ITTC Maneuvering Committee; 24th (2003-2005); 25th (2006-2008)

Larry Weber
Member, Upper Mississippi River Navigation and Environmental Sustainability Program Science Panel, 2005-present
Chair, Hydraulics and Structures Track, ASCE, 2005 EWRI Congress
Task Chair, ASCE Committee on Engineering for Fish Bypass and Enhancement, 1998-present
State and Local Recognitions

NEW IN 2005 – 2006

Chandran, K.B.
The University of Iowa College of Engineering’s Faculty Excellence Award for Research, May 1, 2006

Craig Just
President, Iowa Groundwater Association, 2005-present
Vice President, Iowa Groundwater Association, 2004-2005

Marian Muste
Member, University of Iowa Staff Council, 2006-present

Students
Ryan Asman
2006 John F. Kennedy Memorial Fellowship

Angela Barsic
2005 James L. Shive Memorial Scholarship

Aaron Burkhardt
2005 John F. Kennedy Memorial Fellowship

Curtis Kampman
2006 James L. Shive Memorial Scholarship

Gabriele Villarini
2006 NASA Earth Systems Science Fellowship

CARRIED OVER FROM PREVIOUS YEARS

A. Allen Bradley
Member, Iowa Comprehensive Stormwater Management Committee, 2004-present

K.B. Chandran
Chair, The University of Iowa College of Engineering, Department of Biomedical Engineering, 1998-present

Robert Ettema
Outstanding Service Award, The University of Iowa College of Engineering, 2005
Member, Executive Committee, Center for Global and Regional Environmental Research, The University of Iowa, 1997-present
Chair, The University of Iowa College of Engineering, Department of Civil and Environmental Engineering, 2000-present
Chair, Iowa Highway Research Board, 2003-2004, 2006-2007; Member 2002-present
Member, The University of Iowa Engineering Administrative Council, 1991-1994, 1999-present

Forrest M. Holly, Jr.
Chair, Iowa Engineering and Land Surveying Examination Board, 2001-present

Keri Hornbuckle
Member, Alliance for Graduate Education and Professoriate (AGEP) Iowa Advisory Board Member, 2005
Member, Review Committee, Iowa Research Experience for Undergraduates Proposals, 2004-present
Member, Center for Health Effects on Environmental Contamination (CHEEC) Advisory Board, 2002-present
Member, Faculty Senate Subcommittee on Student Financial Aid, 2003-present

Witold Krajewski
Rose & Joseph Summers Chair of Water Resources Engineering, The University of Iowa, March 2005-present
Best Paper Award, Iowa Academy of Science Meeting, (co-author), 2005
State and Local Recognitions (continued)

Jeffrey Marshall
Chair-Elect, Engineering Section, Iowa Academy of Sciences, 2005-2006
Chair, The University of Iowa College of Engineering Department of Mechanical and Industrial Engineering, 2002-present
Member, The University of Iowa Engineering Administrative Council, January 2001-August 2005

Marian Muste
Staff Research Award, The University of Iowa College of Engineering, 2005
Member, Iowa NPDES Education and Outreach Team, 2004-present
Member, Iowa Comprehensive Workgroup on Stormwater Management, 2003-present

Cornelia Mutel
Consultant, The University of Iowa Museum of Natural History, Design and Development of Biosphere Discovery Hub, 2004-present
Consultant, IDNR, Development of Natural History Publications, 2005-present
Consulting Editor for Natural History, University of Iowa Press, 1994-present
Member, The University of Iowa Collections Coalition, 1996-present
Member, Johnson County Roadside Vegetation Advisory Committee, 2000-present
Vice President, Iowa Native Plant Society, 2003-present
Member, Iowa Academy of Science Membership Committee, 2003-2006

Tatsuaki Nakato
Member, ASCE Annual Environmental and Water Resources Design Conference, Iowa Section, Organizing Committee, 1990-2005

Wilfrid Nixon
Chair, The University of Iowa College of Engineering Ad Hoc Core Curriculum Committee, 1998-present
Interim Chair, The University of Iowa College of Engineering Department of Industrial Engineering, 2000-present

Thanos Papanicolaou
Obermann Center Research Award, The University of Iowa, 2005-2006

Virendra C. Patel
Member, The University of Iowa College of Engineering Development Council, 2000-2006
Member, The University of Iowa College of Engineering Administrative Council, June 1994-June 2005
Member, The University of Iowa Provost’s Committee on Endowed Faculty Positions, September 2003-May 2005

Jerald Schnoor
Allen S. Henry Chair, The University of Iowa, 2002-present

Larry Weber
Member, Engineering Administrative Council, The University of Iowa College of Engineering, May 2004-present
<table>
<thead>
<tr>
<th>Date</th>
<th>Speaker</th>
<th>Affiliation</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>8/26/05</td>
<td>Ken Lubinski</td>
<td>USGS and Science Director, Great Rivers Center for Conservation and Learning</td>
<td>Future Integrated Science in Support of Great River Ecosystem Conservation</td>
</tr>
<tr>
<td>9/2/05</td>
<td>D. A. Lyn</td>
<td>School of Civil Engineering, Purdue University</td>
<td>Experimental Study of (Vertical-) Contraction Scour</td>
</tr>
<tr>
<td>9/16/05</td>
<td>Jeffrey J. Daniels</td>
<td>Dept. of Geological Sciences, The Ohio State University</td>
<td>Three Dimensional Ground Penetrating Radar for Detailed Hydrogeologic Site Characterization</td>
</tr>
<tr>
<td>9/23/05</td>
<td>Ge Wang</td>
<td>Professor, Depts. of Radiology, Biomedical Engineering, Civil Engineering, and Mathematics; Director, Center for X-Ray and Optical Tomography, The University of Iowa</td>
<td>Biomedical Tomography - From Anatomical to Molecular Imaging</td>
</tr>
<tr>
<td>9/30/05</td>
<td>Stephen Coleman</td>
<td>Senior Lecturer, The University of Auckland</td>
<td>Environmental Fluid and Sediment Dynamics</td>
</tr>
<tr>
<td>10/7/05</td>
<td>Yao Liang</td>
<td>Department of Electrical and Computer Engineering, Virginia Tech</td>
<td>HIDE: A Hydrological Integrated Data Environment</td>
</tr>
<tr>
<td>10/14/05</td>
<td>Miguel Wong</td>
<td>University of Minnesota</td>
<td>A Few Thousand Particles (Tracer Stones) Moving Along a Flume</td>
</tr>
<tr>
<td>10/21/05</td>
<td>Mark Nearing</td>
<td>Southwest Watershed Research Center</td>
<td>Spatial Patterns of Soil Erosion and Deposition in Two Small, Semiarid Watersheds</td>
</tr>
<tr>
<td>11/4/05</td>
<td>Timm Strathmann</td>
<td>Professor, University of Illinois</td>
<td>Rapid Abiotic Reduction of Organic Pollutants by Organically-Complexed Iron(II) Species</td>
</tr>
<tr>
<td>11/11/05</td>
<td>Michael D. Delong</td>
<td>Professor and Director, Large River Studies Center, Biology Dept., Winona State University</td>
<td>Does Discharge Control Trophic Dynamics in River-Floodplain Ecosystems?</td>
</tr>
<tr>
<td>11/18/05</td>
<td>Bill Ehm</td>
<td>Iowa DNR</td>
<td>Successful Watershed Restoration-An Iowa Model</td>
</tr>
<tr>
<td>11/23/05</td>
<td>Noor Afzal</td>
<td>Professor, Dept. of Mechanical Engineering, Aligarh University</td>
<td>Hydraulic Jump in Circular and U-Shaped Channels</td>
</tr>
<tr>
<td>12/2/05</td>
<td>Barry L. Johnson</td>
<td>Chief, Aquatic Resources Branch, Upper Midwest Env. Sciences Center La Crosse, Wisconsin</td>
<td>Linking Physical Processes to Ecological Function in Large Rivers: Work at the USGS Upper Midwest Environmental Sciences Center</td>
</tr>
<tr>
<td>12/9/05</td>
<td>Lee Burras</td>
<td>Associate Professor, Agronomy, Iowa State University</td>
<td>Watersheds &amp; People in Iowa - A Pedologist’s Perspective</td>
</tr>
<tr>
<td>Date</td>
<td>Speaker</td>
<td>Affiliation</td>
<td>Topic</td>
</tr>
<tr>
<td>----------</td>
<td>-----------------</td>
<td>--------------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>1/27/06</td>
<td>Rangaswamy</td>
<td>Professor, Geography Dept., The University of Iowa</td>
<td>Paradoxes, Puzzles, and Imagineering in Water Resources Research</td>
</tr>
<tr>
<td></td>
<td>Rajagopal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2/10/06</td>
<td>Mark Cornish</td>
<td>U.S. Army Corps of Engineers, Rock Island District</td>
<td>Fish Passage on the Upper Mississippi River</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2/16/06</td>
<td>Christopher Wilson</td>
<td>National Center for Computational Hydroscience and Engineering, University of Mississippi</td>
<td>Determining the Relative Contribution of Eroded Surface Soils in the Suspended Load of Goodwin Creek, MS, Using 7Be and 210Pxs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2/24/06</td>
<td>Neal Iverson</td>
<td>Iowa State University</td>
<td>Sliding and Erosion Experiments Beneath the Svartisen Ice Cap, Norway</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/3/06</td>
<td>Mohammad Z. Iqbal</td>
<td>Department of Earth Science, University of Northern Iowa</td>
<td>Mapping of Phosphorus in the Sediments of a Eutrophic Lake in Iowa</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/10/06</td>
<td>Rafal Wojcik</td>
<td>Princeton University</td>
<td>Finite Mixture Density Models in Regression, Simulation and Classification of Hydrologic Variables</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/24/06</td>
<td>Daniel M. Tartakovksy</td>
<td>Dept. of Mechanical and Aerospace Engineering, University of California, San Diego</td>
<td>Flow and Transport in Highly Heterogeneous Aquifers: Coping With Uncertainty</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/31/06</td>
<td>Anna Michalak</td>
<td>Dept. of Civil and Envir. Engr. and Dept. of Atmospheric, Oceanic, and Space Sciences, The University of Michigan</td>
<td>Application of Geostatistical Tools for Quantifying Complexity and Uncertainty in Environmental Systems</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4/7/06</td>
<td>Anastasios Tsonis</td>
<td>Department of Mathematical Sciences, Atmospheric Sciences Group, University of Wisconsin-Milwaukee</td>
<td>What Do Networks Have to Do With Climate?</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4/14/06</td>
<td>Marc Serre</td>
<td>Assistant Professor, Environmental Sciences and Engineering, The University of North Carolina</td>
<td>Integrating Multiple Source Data for the Water Quality Assessment of River Networks using a Geostatistical Bayesian Maximum Entropy Framework with River Metric</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4/28/06</td>
<td>William B. Richardson</td>
<td>Research Aquatic Ecologist, USGS, Upper Midwest Env. Sciences Center</td>
<td>Nitrogen Cycling in the Upper Mississippi River: An Interaction Between Biogeochemistry and Hydrology</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5/3/06</td>
<td>Barbara Mahler</td>
<td>Texas Water Science Center, USGS</td>
<td>YOU’RE STANDING ON IT! Parking Lot Sealcoat as a Major Source of PAHs in Urban and Suburban Environments</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date</td>
<td>Speaker</td>
<td>Affiliation</td>
<td>Topic</td>
</tr>
<tr>
<td>--------</td>
<td>-----------------------</td>
<td>----------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>6/6/06</td>
<td>Hae-Won Choi</td>
<td>Scientific Computing Division, National Center for Atmospheric Research</td>
<td>Toward Scalable High-Order Galerkin Methods Devising Adaptive Mesh Refinements</td>
</tr>
<tr>
<td>6/7/06</td>
<td>Arnold Fontaine</td>
<td>Senior Scientist, Fluids Research Department Head, Applied Research Laboratory, Penn State University</td>
<td>Synergistic Drag Reduction with Combined Microbubble and Polymer Injection</td>
</tr>
<tr>
<td>6/8/06</td>
<td>Farzad Ismail</td>
<td>Department of Aerospace Engineering, University of Michigan-Ann Arbor</td>
<td>Toward a Reliable Prediction of Shocks in Hypersonic Flow: Resolving Carbuncles with Entropy and Vorticity Control&quot;</td>
</tr>
<tr>
<td>6/13/06</td>
<td>Ying Huang</td>
<td>Department of Mechanical Engineering, Pennsylvania State University</td>
<td>Dynamics and Stability of Lean-Pre-mixed Swirl-Stabilized Combustion</td>
</tr>
<tr>
<td>6/15/06</td>
<td>Susanta Kumar Das</td>
<td>Institute for Integrated Energy Systems, Dept. of Mechanical Engineering, University of Victoria</td>
<td>Visualization and Characteristics of Coherent Eddies in Fully Developed Turbulent Channel Flows by Direct Numerical Simulation (DNS)</td>
</tr>
</tbody>
</table>
Senior Staff

Below, Paul, Contracts Administrator
Bradley, A. Allen, Associate Professor, Associate Research Engineer
Carrica, Pablo, Associate Professor, Associate Research Engineer
Chandran, K.B., Professor, Chairman, Biomedical Engineering, Research Engineer
Ciach, Grzegorz, Associate Research Engineer
Constantinescu, George, Assistant Professor, Assistant Research Engineer
DeJong, Darian, Engineer III
Eichinger, William, Professor, Associate Research Engineer
Ettema, Robert, Professor, Chairman, Civil & Environmental Engineering, Research Engineer
Holly, Forrest M. Jr., Professor Emeritus
Hornbuckle, Keri, Associate Professor, Associate Research Engineer
Houser, Douglas, Engineer II
Illman, Walter, Assistant Professor
Jain, Subhash C., Professor Emeritus
Just, Craig, Adjunct Assistant Professor, Associate Research Engineer
Kader, Khalid, Assistant Professor
Krajewski, Witold, Professor, Research Engineer
Kruger, Anton, Adjunct Assistant Professor, Associate Research Engineer
Li, Songheng, Assistant Research Engineer
Lin, Ching-Long, Associate Professor, Associate Research Engineer
Longo, Joe, Assistant Research Engineer
Macagno, Enzo O., Professor Emeritus
Macagno, Matilde, Scientist Emeritus
Marshall, Jeffrey, Professor, Chairman, Mechanical and Industrial Engineering, Research Engineer
Muste, Marian, Associate Research Engineer
Mutel, Cornelia, Historian and Archivist
Nakato, Tatsuaki, Adjunct Professor, Research Engineer
Nixon, Wilfrid A., Professor, Interim Chair, Civil & Environmental Engineering, Research Engineer
Odgaard, A. Jacob, Professor, Research Engineer
Papanicolaou, Thanos, Associate Professor, Associate Research Engineer
Patel, Virendra C., University of Iowa Foundation Distinguished Professor, Research Engineer
Polito, Marcela, Assistant Research Engineer
Schnoor, Jerald, Miller Distinguished Professor, Research Engineer
Stanier, Charles, Assistant Professor, Research Engineer
Stern, Fred, Professor, Research Engineer
Udaykumar, H.S., Associate Professor, Assistant Research Engineer
Weber, Larry, Associate Professor, Associate Research Engineer, Director
Weirich, Frank, Associate Professor, Associate Research Engineer
Wilson, Mark A., Data Systems Coordinator
Xing, Tao, Assistant Research Scientist
Zhang, You-Kuan, Professor, Research Engineer
Graduate Students / Assistants and Fellows

Abaci, Ozan
Graduate Research Assistant
C.E.E.

* Billing, Brandon
Graduate Research Assistant
C.E.E.

* ** Brownson, Zachariah
Graduate Research Assistant
C.E.E.

Campbell, Elliott
Graduate Research Assistant
C.E.E.

* ** Chesnutt, Jennifer
Graduate Research Assistant
C.E.E.

* Choi, Jiwoong
Graduate Research Assistant
M.I.E.

Craig, Andrew
Graduate Research Assistant
C.E.E.

Daraio, Joseph
Graduate Research Assistant
C.E.E.

Dermisis, Dimitrios
Graduate Research Assistant
C.E.E.

* ** Dhutia, Devansh
Graduate Research Assistant
C.S.

* Domaszczynski, Piotr
Graduate Research Assistant
C.E.E.

** Fennelly, Benjamin
Graduate Research Assistant
C.E.E.

* Ferrari, Gaston
Graduate Research Assistant
C.E.E.

** Fox, James
Graduate Research Assistant
C.E.E.

Frasson, Renato
Graduate Research Assistant
C.E.E.

* Ghosh, Surajeet
Graduate Research Assistant
M.I.E.

Haque, MD Manjurul
Graduate Research Assistant
C.E.E.

* ** Hansen, Terri
Graduate Research Assistant
BioMed

* Ho, Hao-Che
Graduate Research Assistant
C.E.E.

Jeffrey, Brian
Graduate Research Assistant
M.I.E.

Kandasamy, Manivannan
Graduate Research Assistant
M.I.E.

Kim, Dongsu
Graduate Research Assistant
C.E.E.

** Kim, Youngsung
Graduate Research Assistant
C.E.E.

Kirkil, Gokhan
Graduate Research Assistant
C.E.E.

Kochumman, George
Graduate Research Assistant
C.E.E.

Koken, Mete
Graduate Research Assistant
C.E.E.

* ** Kumar, Haribalan
Graduate Research Assistant
M.I.E.

Larese-Casanova, Philip
Graduate Research Assistant
C.E.E.

Lee, Haegyun
Graduate Research Assistant
C.E.E.

Lewandowski, Piotr
Graduate Research Assistant
C.E.E.

Liu, Xiaoyi
Graduate Research Assistant
G.S.

** Lund, Kris
Graduate Research Assistant
G.S.

* Mahesh, Venkatesh Murthy
Graduate Research Assistant
C.S.

Mandapaka Venkata, Pradeep
Graduate Research Assistant
C.E.E.

* Marella, SaiKrishna
Graduate Research Assistant
M.I.E.

McCoy, Andy
Graduate Research Assistant
C.E.E.

** McDaniel, Brady
Graduate Research Assistant
C.E.E.

** Morales Garcia, Reinaldo
Graduate Research Assistant
C.E.E.

* Mousavirad, Sayed Maysam
Graduate Research Assistant
M.I.E.

* Oben-Nyarko, Kwaku
Graduate Research Assistant
C.E.E.

** Ooi, Seng-Keat
Graduate Research Assistant
C.E.E.

** Ozdemir, Celalettin
Graduate Research Assistant
C.E.E.

** Pinto Heredero, Antonio
Graduate Research Assistant
M.I.E.

** Polatel, Ceyda
Graduate Research Assistant
M.I.E.

Qian, Jing
Graduate Research Assistant
M.I.E.

Qiu, Ju
Graduate Research Assistant
C.E.E.

Qiu, Lin
Graduate Research Assistant
C.E.E.

* Sadat Hosseini, Seyed Hamid
Graduate Research Assistant
M.I.E.

Sakamoto, Nobuaki
Graduate Research Assistant
M.I.E.

Sambasivan, Shiv Kumar
Graduate Research Assistant
M.I.E.

** Sanford, John Thomas
Graduate Research Assistant
C.E.E.

* Seo, Bongchul
Graduate Research Assistant
C.E.E.

Shao, Jun
Graduate Research Assistant
M.I.E.

* Sinha, Sumit
Graduate Research Assistant
C.E.E.

* Strom, Kyle
Graduate Research Assistant
C.E.E.
* Theregowda, Ranjani  Graduate Research Assistant  C.E.E.
  Tokyay, Talia  Graduate Research Assistant  C.E.E.
* Tsakiris, Achilleas  Graduate Research Assistant  C.E.E.
  Turan, Cagri  Graduate Research Assistant  C.E.E.
  Villarini, Gabriele  Graduate Research Assistant  C.E.E.
* Wardman, Brian  Graduate Research Assistant  C.E.E.
* Wombacher, William  Graduate Research Assistant  C.E.E.
  Xia, Quanxin  Graduate Research Assistant  BioMed
** Yang, Yi  Graduate Research Assistant  M.I.E.
* Yin, Danting  Graduate Research Assistant  G.S.
  Yoder, Colin  Graduate Research Assistant  BioMed
  Yoon, Hyun Se  Graduate Research Assistant  E.C.
** Yorozuya, Atsuhino  Graduate Research Assistant  C.E.E.
  Young, Nathan  Graduate Research Assistant  C.E.E.
** Zeng, Jie  Graduate Research Assistant  C.E.E.
** Zhao, Yong Li  Graduate Research Assistant  M.I.E.

* Began association with IIHR between 7/1/05 - 6/30/06.
** Terminated or left between 7/1/05 - 6/30/06.

BioMed  Biomedical Engineering
C.E.E.  Civil and Environmental Engineering
C.S.  Computer Science
E.C.  Electrical and Computer Engineering
G.S.  Geoscience
M.I.E.  Mechanical and Industrial Engineering
IIHR Advisory Board

Mr. Jon Duyvejonck
Upper Mississippi River Conservation Committee
Coordinator
U.S. Fish and Wildlife Service

Dr. Vijay Gupta
Professor and Fellow
Co-op Institute for Research in Environmental Sciences
University of Colorado

Dr. James R. Houston
Director
U.S. Army Engineering Research and
Development Center

Mr. Asger Kej
Managing Director
DHI Water and Environment

Teresa J. Newton
Fishery Biologist
Upper Midwest Environmental Sciences Center

Dr. William B. Morgan
Retired Head of Hydromechanics Directorate
U.S. Navy David Taylor Model Basin

Dr. Michael Ports (Chair)
Director, Urban Watershed Management
Black & Veatch Corporation

Dr. Mary Skopec
Supervisor, Water Monitoring
Iowa Department of Natural Resources

2005 - 2006

Mr. Gregs Thomopoulos
CEO, Stanley, Inc.
President and CEO, The Stanley Group

Dr. Robert R. Twilley
Director
Wetland Biogeochemistry Institute
Department of Oceanography and Coastal Science
Louisiana State University

Dr. Jin Wu
Outstanding Scholarship Chair and
Distinguished Professor of Hydraulic and Ocean En-
gineering
National Cheng Kung University

Ex Officio Members

Dr. P. Barry Butler
Dean
College of Engineering
The University of Iowa
Iowa City, Iowa

Dr. Larry Weber
Director
IIHR—Hydroscience & Engineering
The University of Iowa
Iowa City, Iowa

Paul Below
Departmental Administrator
IIHR—Hydroscience & Engineering
The University of Iowa
Iowa City, Iowa