SUMMARY OF ACTIVITIES in 1992

IOWA INSTITUTE OF HYDRAULIC RESEARCH
THE UNIVERSITY OF IOWA
IOWA CITY, IOWA
**SUMMARY OF ACTIVITIES IN 1992**

**IOWA INSTITUTE OF HYDRAULIC RESEARCH**  
**THE UNIVERSITY OF IOWA**  
**IOWA CITY, IOWA**  
**February 1993**

**SPONSORED RESEARCH PROJECTS ACTIVE IN 1992**

<table>
<thead>
<tr>
<th>Study Subject</th>
<th>Sponsor</th>
<th>Investigator(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatigue Crack Propagation in Freshwater Ice</td>
<td>ARO</td>
<td>Nixon</td>
</tr>
<tr>
<td>** Conduct Hydraulic Laboratory Tests for Arkansas Electric Cooperative Corporation Dam No. 2 Hydropower Project on the Arkansas River</td>
<td>BHPG</td>
<td>Nakato</td>
</tr>
<tr>
<td>Analysis of Thermal Discharge at Joliet Station</td>
<td>CECo</td>
<td>Jain, Holly</td>
</tr>
<tr>
<td>* Remote Sensing of Soil Moisture</td>
<td>CGRER</td>
<td>Krajewski</td>
</tr>
<tr>
<td>* Experimental Design Studies of a New Method for Estimation of Open-Ocean Rainfall</td>
<td>CGRER</td>
<td>Krajewski</td>
</tr>
<tr>
<td>** Determine Magnitude and Extent of Turbulence Downstream of a Flow-Control Structure</td>
<td>CH²MH</td>
<td>Jain</td>
</tr>
<tr>
<td>** Determine Sediment-Control Techniques for Credit Island Slough, Mississippi River</td>
<td>COD</td>
<td>Nakato</td>
</tr>
<tr>
<td>Coralville Reservoir Water Quality Study</td>
<td>COE(RI)</td>
<td>Johnson, McDonald</td>
</tr>
<tr>
<td>Numerical Simulation of Deposition Patterns in Iowa Reservoirs</td>
<td>COE(RI)</td>
<td>Holly</td>
</tr>
<tr>
<td>** Model Study of Powerhouse Design for Hydropower Development on Mississippi River at Lock and Dam #14 near LeClaire, Iowa</td>
<td>CoL</td>
<td>Jain, Ettema, Nakato</td>
</tr>
<tr>
<td>Hydraulic Model of Downstream Effects of Hydropower Installation at L&amp;D 14 Near LeClaire, IA</td>
<td>CoL</td>
<td>Jain</td>
</tr>
<tr>
<td>** Study Performance of Simplex Velocity Probe</td>
<td>CTI</td>
<td>Parthasarathy</td>
</tr>
<tr>
<td>** Studies for Siting Boat Slips and Marinas, and Protecting Island and River Banks, for Dakota Dunes Development</td>
<td>DDD</td>
<td>Nakato</td>
</tr>
<tr>
<td>* Aerodynamics of Phonation</td>
<td>DHHS</td>
<td>Patel</td>
</tr>
<tr>
<td>** Diffraction of Acoustic Waves by a Circular Disk of Arbitrary Impedance</td>
<td>DTRC</td>
<td>Chwang</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>**/ *</th>
<th>Activity Description</th>
<th>Sponsor</th>
<th>Lead Scientist(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>**</td>
<td>Hydraulic Model Test of the Proposed Water Intake Structure: Spurlock Station Papermill Steam Supply</td>
<td>EKP</td>
<td>Nakato</td>
</tr>
<tr>
<td></td>
<td>Hydraulic Model Test of Unit-1 Cooling-Tower Circulating-Water Intake Structure, Spurlock Power Station</td>
<td>EKP</td>
<td>Nakato</td>
</tr>
<tr>
<td>**</td>
<td>Consulting Services to Establish Value of Exploratory Research</td>
<td>EPRI</td>
<td>Kennedy</td>
</tr>
<tr>
<td></td>
<td>Oxygen Transfer in Turbulent Shear Flows</td>
<td>EPRIa</td>
<td>Jain</td>
</tr>
<tr>
<td></td>
<td>Thermal-Plant Derating to meet Environmental Temperature Standard</td>
<td>EPRIa</td>
<td>Krajewski, Holly</td>
</tr>
<tr>
<td></td>
<td>Estimation of Regional Water Availability for the Electric Power Utilities</td>
<td>EPRIa</td>
<td>Georgakakos, Cramer</td>
</tr>
<tr>
<td></td>
<td>Development of Sediment Deflectors for Water Intakes at Power Plants</td>
<td>EPRIa</td>
<td>Odgaard, Nakato</td>
</tr>
<tr>
<td></td>
<td>Icing-Induced Vibration of Cables</td>
<td>EPRIa</td>
<td>Ettema, Nixon</td>
</tr>
<tr>
<td>**</td>
<td>Hydraulic Model Study of Proposed Water Intake System on the Raritan River, New Jersey</td>
<td>EWC</td>
<td>Ettema, Odgaard</td>
</tr>
<tr>
<td>**</td>
<td>Hydraulic Model Sediment Study of Proposed Missouri River Water Intake St. Louis County Water Company</td>
<td>HSI</td>
<td>Nakato</td>
</tr>
<tr>
<td>**</td>
<td>Hydraulic Model Test of the Proposed Missouri River Water Intake Structure, St. Louis County Water Company</td>
<td>HSI</td>
<td>Nakato</td>
</tr>
<tr>
<td></td>
<td>Field Measurements of Plow Loads During Ice Removal Operations</td>
<td>IDOT</td>
<td>Nixon</td>
</tr>
<tr>
<td>**</td>
<td>Test Erodibility of Rock From Mississippi River, U.S. 34 Bridge at Burlington, IA</td>
<td>IDOT</td>
<td>Nakato</td>
</tr>
<tr>
<td>**</td>
<td>Hydraulic Model to Determine Nature of Flow on Downstream Apron of Prairie Creek Dam</td>
<td>IELP</td>
<td>Ettema</td>
</tr>
<tr>
<td>**</td>
<td>Development and Application of Computational Techniques to Examine Irrigation Canal Control Automation Methods</td>
<td>IID</td>
<td>Holly</td>
</tr>
<tr>
<td></td>
<td>Hydraulic-Laboratory Model Studies of Circulating-Water Intake Structures: Ulchin Nuclear Units 3 &amp; 4</td>
<td>KOPEC</td>
<td>Nakato</td>
</tr>
<tr>
<td></td>
<td>Design and Implement Non-Point Source Water Monitoring Study</td>
<td>LC/IDOA</td>
<td>Johnson</td>
</tr>
<tr>
<td></td>
<td>Design, Fabricate, and Install Flume for Lapham Science Center: University of Wisconsin-Milwaukee</td>
<td>MCC</td>
<td>Ettema</td>
</tr>
<tr>
<td></td>
<td>Conduct of a Sediment-Abatement Study of Neal 4 Circulating-Water Pump Intake Structure</td>
<td>MPS</td>
<td>Nakato</td>
</tr>
<tr>
<td>**</td>
<td>Ice-Mass Impact Hydrodynamics</td>
<td>MRDC</td>
<td>Landweber, Ettema</td>
</tr>
</tbody>
</table>
* Winter Transportation Problems: Identifying Strategies to Improve Safety  
MTC Nixon

* A Statistical Framework for Utilization of Radar Data in Tropical Rainfall Measuring Mission  
NASA Krajewski

* Hydraulic Engineering Challenges in Space  
NASA Odgaard

NASA Space Grant  
NASA Chen

** CLASS Soundings of Atmospheric Conditions  
NCAR Georgakakos

** Hydraulic Model Study to Alleviate Sediment Problems at Intake of Byron Nuclear Station  
NE Odgaard

Studies of Flow in the Paris Notebooks of Leonardo da Vinci  
NEH Macagno

Continue Testing Software Program HFS and Develop Criteria for Verifying Results  
NOAA Georgakakos

National System for Determining Criteria Runoff Values for Flash Flood Prediction  
NOAA Georgakakos

Climatological Use of Radar Estimates of Rainfall  
NOAA Krajewski

* Determine Catchment Boundaries for the State of Oklahoma  
NOAA Georgakakos

* Use of Satellite Rainfall Estimates with Real-Time Flow Prediction Models for Large Catchments  
NSF Georgakakos

* AIT (US)-CCNAA (Taiwan) Joint Seminar: Prediction and Damage Mitigation of Meteorologically Induced Natural Disasters  
NSF Krajewski

Advance Collaborative Research on Flow in Ice-Covered Alluvial Channels (Travel Grant in collaboration with Hungarian Research Council for Water Resources)  
NSF Ettema, Holly, Patel

Flow and Sediment Transport in Ice-Covered Alluvial Channels (Joint Project with Hungary Research Center for Water Resources)  
NSF Ettema, Holly, Patel

Development of Nonintrusive Optical Techniques for Study of Sediment Transport  
NSF Parthasarathy, Patel

Improved Refrigeration Capability for the IIHR Ice Engineering Laboratory  
NSF Nixon

Presidential Young Investigator Award  
NSF Georgakakos

** Quantitative Flow Visualization and Imaging  
NSF Chen

** Develop and Test Improved, Compact Helicoidal-Ramp Dropshaft  
NSSSL Jain

Unsteady Three-Dimensional Turbulent Flows  
ONR Patel

** Interaction and Impact of Floating Bodies ONR Chwang

Unsteady Viscous Propeller Hydrodynamics ONR Stern

Hydrodynamics of Submerged Self-Propelled Three-Dimensional Bodies ONR Stern, Patel, Kim

Free-Surface Effects on Ship Boundary Layers and Wakes (continuation) ONR Stern

Viscous Propulsor Hydrodynamics ONR Stern

* Sixth International Conference on Numerical Ship Hydrodynamics ONR Patel

* Evaluation of Surface-Ship Boundary-Layer and Wake-Field Model-Scale Data Base ONR/SNAME Stern

* Conduct Hydraulic Model Study of Pit 6 Dam Spillway and Energy Dissipator PG&E Nakato

* Hydraulic Model Study for Potter Valley Intake Fish Screen PG&E Odgaard

Hydraulic Model Tests for Juvenile Fish Guidance System PUD-CC Odgaard

Testing and Analysis of Fish Screen and Bypass System PUD-GC Odgaard

* Model Study to Site Juvenile Fish Bypass Outfalls Downstream of Wanapum and Priest Rapids Dams and 3-D Numerical Simulation of Flows in the Study Reaches PUD-GC Odgaard, Patel, Sotiropoulos

** Hydraulic Laboratory Model Study of Circulating Water Discharge System Illinois Power Company's Clinton Power Station S&L Jain

* ** Bathymetric Survey to Determine River Conditions in Des Moines River at the Site of a Power Transmission Tower SH Nakato

** Removal of Ice from Highways Using Contact Methods SHRP Nixon

Development of a Numerical Method for the Prediction of Flow in Autoventing Hydroturbine Ducts TVA Patel, Sotiropoulos

Numerical Modelling of Sediment Transport in Watts Bar Reservoir TVA Holly

** Field and Model Study to Test Debris-Deflector Device for Union Electric's Labadie Station UE Nakato

** Investigate Silt Deposition and Accumulation of Debris in the Sioux Plant Intake Channel UE Nakato

** Land-Atmosphere Feedbacks on Regional Scales in Mid-Continental Watersheds UI Georgakakos

* Real-Time Estimation and Prediction of Radar Rainfall USAID Krajewski

Guidelines for Improving Measurement of Ice-Covered Flow USGS Holly
* Water Resources of the United States: Problems, Risk Perceptions and Priorities
   USGS Krajewski

Impacts of Global Warming on Reservoir Systems
   USGS/GIT Georgakakos

** Fabrication and Installation of a Flume at the University of Wisconsin-Madison
   UWM Nakato

Implementation of Mobile-bed Capability in CH3D
   WES Holly

** Determine Influence of Levee on Flood Levels and Durations
   WKB Ettema, Jain

* Computational Model Study of Sediment Transport of Upper Rhine River
   WSA Holly

** Conduct Flume Tests to Determine Effect of Lure Lead-Body Form on Lure Vibration
   XL\textsuperscript{n} Jain

Abbreviations

ARO U.S. Army Research Office
BHPG
CECo Commonwealth Edison Company
CGER Center for Global and Regional Environmental Research
CH\textsuperscript{2}MH CH\textsuperscript{2}MHill, Engineers
COD City of Davenport
COE(RI) U.S. Army Corps of Engineers, Rock Island District
CoL City of LeClaire, Iowa
CTI Cooling Tower Institute
DDD Dakota Dunes Development
DHHS Department of Health and Human Services
DTRC David Taylor Research Center
EKP East Kentucky Power Coop., Inc.
EPRI Electric Power Research Institute
EPRIa Electric Power Research at Iowa (Funded by Iowa's Investor-Owned Utilities)
EWC Elizabethtown Water Company
HSI Horner & Shifrin, Inc.
IDOT Iowa Department of Transportation
IELP Iowa Electric Light and Power Company
IID Imperial Irrigation District
KOPEC Korea Power Engineering Co., Inc.
LC/IDOA Linn County/Iowa Department of Agriculture
MCC Marino Construction Co.
MPS Midwest Power Systems, Inc.
MRDC Mobil Research and Development Corporation
MTC Midwest Transportation Center
NASA National Aeronautics and Space Administration
NCAR National Center for Atmospheric Research
NE Nutech Engineers
NEH National Endowment for the Humanities
NOAA National Oceanic and Atmospheric Administration
NSF National Science Foundation
NSSL Nihon-Suiko Sekkei Co., Ltd.
ONR Office of Naval Research

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Full Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>PG&amp;E</td>
<td>Pacific Gas &amp; Electric</td>
</tr>
<tr>
<td>PUD-CC</td>
<td>Public Utility District No. 1 of Chelan County (Washington)</td>
</tr>
<tr>
<td>PUD-GC</td>
<td>Public Utility District of Grant County (Washington)</td>
</tr>
<tr>
<td>S&amp;L</td>
<td>Sargent &amp; Lundy</td>
</tr>
<tr>
<td>SH</td>
<td>Shive-Hattery</td>
</tr>
<tr>
<td>SHRP</td>
<td>Strategic Highway Research Program</td>
</tr>
<tr>
<td>SNAME</td>
<td>Society of Naval Architecture and Marine Engineers</td>
</tr>
<tr>
<td>TVA</td>
<td>Tennessee Valley Authority</td>
</tr>
<tr>
<td>UE</td>
<td>Union Electric</td>
</tr>
<tr>
<td>UI</td>
<td>University of Iowa</td>
</tr>
<tr>
<td>USAID</td>
<td>U.S. Agency for International Development</td>
</tr>
<tr>
<td>USGS</td>
<td>U.S. Geological Survey</td>
</tr>
<tr>
<td>USGS/GIT</td>
<td>U.S. Geological Survey/Georgia Institute of Technology</td>
</tr>
<tr>
<td>UWM</td>
<td>University of Wisconsin, Madison</td>
</tr>
<tr>
<td>WES</td>
<td>Waterways Experiment Station</td>
</tr>
<tr>
<td>WKB</td>
<td>Walker, Knopf Billingsley</td>
</tr>
<tr>
<td>WSA</td>
<td>Wasser- und Schiffahrtsamt Mannheim</td>
</tr>
<tr>
<td>XLn</td>
<td>XL^n</td>
</tr>
</tbody>
</table>
1992 PUBLICATIONS

Institute of Hydraulic Research
The University of Iowa

IIHR REPORTS


### IIHR LIMITED DISTRIBUTION REPORTS


IIHR MONOGRAPHS


** Terminated/Left in 1992.
JOURNAL ARTICLES


PAPERS PRESENTED AT CONFERENCES NOT PUBLISHED IN PROCEEDINGS


DISCUSSIONS

BOOK PUBLICATIONS


BULLETINS

None

OTHER


CONFERENCES/SYMPOSIA/SHORT COURSES/WORKSHOPS ORGANIZED

PH.D. THESES ACCEPTED


M.S. THESIS ACCEPTED


M.S. WITHOUT THESES

Smith, Brennan 1992 (Advisor: F.M. Holly Jr.).
IIHR SENIOR STAFF

* ** Bae, Dag Hyo, Postdoctoral Associate
* ** Billi, Paolo, Visiting Professor
* Chen, Bin, Visiting Researcher
** Chen, Ching-Jen, Professor, Chairman (M.E.), Research Engineer
* Chen, Lea-Der, Professor, Interim Chairman, Mechanical Engineering
** Chwang, Allen T., Professor, Research Engineer
** Cramer, James, Data Systems Coordinator
* Dagan, Arie, Visiting Scientist
Ettema, Robert, Professor, Acting Director, Research Engineer
Georgakakos, Konstantine P., Associate Professor, Research Engineer
Giaquinta, A.R., Adjunct Associate Professor and Associate Research Scientist
Goss, James, Engineer III
Holly, Forrest M. Jr., Professor, Research Engineer
Houser, Douglas, Engineer II

* ** Hsu, T.W., Visiting Professor
Jain, Subhash C., Professor, Research Engineer
Janssen, Marlene, Administrative Associate
Johnson, J. Kent, Adjunct Assistant Professor
* Kim, Wu Joan, Postdoctoral Associate
Krajewski, Witold F., Associate Professor, Research Engineer
Landweber, Louis, Professor Emeritus
Macagno, Enzo O., Professor Emeritus
McDonald, Donald B., Professor Emeritus
* Melville, Bruce, Visiting Research Scientist
Mutel, Connie, Program Associate

* ** Nakakita, Eiichi, Visiting Associate Professor
Nakato, Tatsuaki, Adjunct Associate Professor, Acting Associate Director, Research Scientist
Nixon, Wilfrid A., Assistant Professor, Research Engineer
Opgaard, A. Jacob, Professor, Research Engineer, Interim Associate Dean (CoE)
* Ogden, Fred, Postdoctoral Associate
* Park, Inbo, Visiting Research Scientist
Parkin, Gene, Professor, Chairman, Civil and Environmental Engineering
Parthasarathy, N. Ramkumar, Assistant Research Scientist
Patel, Virendra C., University of Iowa Foundation Distinguished Professor, Research Engineer
* Savic, Ljubodrag, Postdoctoral Associate
** Shen, Huihua, Postdoctoral Associate
** Schnoor, Jerald, Professor, Research Engineer
Sotiropoulos, Fotis, Postdoctoral Associate
* Spasojevic, Miodrag, Postdoctoral Associate
Stern, Fred, Associate Professor, Research Engineer
* Tahara, Yusuke, Postdoctoral Associate
* ** Tsai, Whey-Fone, Postdoctoral Associate
* Wang, Yalin, Postdoctoral Associate
Weirich, Frank, Associate Professor of Geography, Research Engineer
Wilson, Mark A., Data Systems Coordinator
** Yoon, Byungman, Postdoctoral Associate
* Zhang, D.H., Postdoctoral Associate

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ali, Mathahel Ag Mohamed</td>
<td>Graduate Research Assistant</td>
<td>C.E.</td>
</tr>
<tr>
<td>Anagnostou, Emmanouil N.</td>
<td>Graduate Research Assistant</td>
<td>C.E.</td>
</tr>
<tr>
<td>Asolekar, Shyam</td>
<td>Graduate Student</td>
<td>C.E.</td>
</tr>
<tr>
<td>Azcona, Alejandro</td>
<td>Graduate Student</td>
<td>C.E.</td>
</tr>
<tr>
<td>Bagherzadeh</td>
<td>Graduate Student</td>
<td>C.E.</td>
</tr>
<tr>
<td>Barkdoll, Brian</td>
<td>Graduate Research Assistant</td>
<td>C.E.</td>
</tr>
<tr>
<td>Bode, Jonathan S.</td>
<td>Graduate Student</td>
<td>C.E.</td>
</tr>
<tr>
<td>Brockway, Charles</td>
<td>Hunter Rouse Fellow</td>
<td>C.E.</td>
</tr>
<tr>
<td>Carpenter, Theresa</td>
<td>Graduate Research Assistant</td>
<td>C.E.</td>
</tr>
<tr>
<td>Carsteanu, Alin</td>
<td>Graduate Research Assistant</td>
<td>C.E.</td>
</tr>
<tr>
<td>Chahande, Ashutash</td>
<td>Graduate Research Assistant</td>
<td>C.E.</td>
</tr>
<tr>
<td>Chen, Chiow-Chuyan</td>
<td>Graduate Research Assistant</td>
<td>M.E.</td>
</tr>
<tr>
<td>Cheng, C.C.</td>
<td>Graduate Research Assistant</td>
<td>C.E.</td>
</tr>
<tr>
<td>Choi, Jung-Eun</td>
<td>Graduate Research Assistant</td>
<td>M.E.</td>
</tr>
<tr>
<td>Choi, Seok Ki</td>
<td>Graduate Research Assistant</td>
<td>M.E.</td>
</tr>
<tr>
<td>Choi, Taehoon</td>
<td>Graduate Research Assistant</td>
<td>C.E.</td>
</tr>
<tr>
<td>Chung, Cheng-Hua</td>
<td>Graduate Research Assistant</td>
<td>C.E.</td>
</tr>
<tr>
<td>Chung, Kyung-Nam</td>
<td>Graduate Research Assistant</td>
<td>M.E.</td>
</tr>
<tr>
<td>Ciach, Grzegorz</td>
<td>Graduate Research Assistant</td>
<td>C.E.</td>
</tr>
<tr>
<td>Daly, Stephen</td>
<td>Graduate Research Assistant</td>
<td>C.E.</td>
</tr>
<tr>
<td>Eckstein, Steve</td>
<td>Graduate Research Assistant</td>
<td>C.E.</td>
</tr>
<tr>
<td>Fang, Wen-Tsun</td>
<td>Graduate Student</td>
<td>C.E.</td>
</tr>
<tr>
<td>French, Mark</td>
<td>Graduate Student</td>
<td>C.E.</td>
</tr>
<tr>
<td>Guetter, Alexander</td>
<td>Graduate Research Assistant</td>
<td>C.E.</td>
</tr>
<tr>
<td>Guo, Junke</td>
<td>Graduate Research Assistant</td>
<td>M.E.</td>
</tr>
<tr>
<td>Hagen, Scott</td>
<td>Graduate Research Assistant</td>
<td>C.E.</td>
</tr>
<tr>
<td>Hayden, Warren</td>
<td>Graduate Research Assistant</td>
<td>C.E.</td>
</tr>
<tr>
<td>Henne, Randy</td>
<td>Graduate Research Assistant</td>
<td>C.E.</td>
</tr>
<tr>
<td>Hsu, Shau-Hua</td>
<td>Graduate Research Assistant</td>
<td>C.E.</td>
</tr>
<tr>
<td>Huang, Ching-Jer</td>
<td>Graduate Research Assistant</td>
<td>M.E.</td>
</tr>
<tr>
<td>Johnson, Tim</td>
<td>Graduate Research Assistant</td>
<td>M.E.</td>
</tr>
<tr>
<td>Kessy, M.E.</td>
<td>Graduate Student</td>
<td>C.E.</td>
</tr>
<tr>
<td>Kim, You-Gon</td>
<td>Graduate Research Assistant</td>
<td>M.E.</td>
</tr>
<tr>
<td>Lacina, Kyle</td>
<td>Graduate Research Assistant</td>
<td>C.E.</td>
</tr>
<tr>
<td>Lake, Brad</td>
<td>Graduate Student</td>
<td>C.E.</td>
</tr>
<tr>
<td>Lee, Jae-Soo</td>
<td>Graduate Research Assistant</td>
<td>C.E.</td>
</tr>
<tr>
<td>Licht, Louis</td>
<td>Graduate Student</td>
<td>C.E.</td>
</tr>
<tr>
<td>Lin, Fangbiao</td>
<td>Graduate Research Assistant</td>
<td>C.E.</td>
</tr>
<tr>
<td>Lin, Guoliang</td>
<td>Graduate Research Assistant</td>
<td>C.E.</td>
</tr>
<tr>
<td>Lin, Wan Lai</td>
<td>Graduate Student</td>
<td>M.E.</td>
</tr>
<tr>
<td>Liu, Chunyan</td>
<td>Graduate Research Assistant</td>
<td>C.E.</td>
</tr>
<tr>
<td>Longo, Joseph</td>
<td>Graduate Research Assistant</td>
<td>M.E.</td>
</tr>
<tr>
<td>Luknanto, Djoko</td>
<td>Graduate Student</td>
<td>C.E.</td>
</tr>
<tr>
<td>McAllister, Ian J.</td>
<td>Graduate Student</td>
<td>C.E.</td>
</tr>
<tr>
<td>McCollum, Jeff</td>
<td>Graduate Research Assistant</td>
<td>C.E.</td>
</tr>
<tr>
<td>Meselhe, Ehab</td>
<td>Graduate Student</td>
<td>C.E.</td>
</tr>
<tr>
<td>Mohammad, Ejaz</td>
<td>Graduate Research Assistant</td>
<td>C.E.</td>
</tr>
<tr>
<td>Mostafa, Essam</td>
<td>Graduate Student</td>
<td>C.E.</td>
</tr>
<tr>
<td>Mullusky, Mary</td>
<td>Graduate Research Assistant</td>
<td>C.E.</td>
</tr>
<tr>
<td>Muste, Marian</td>
<td>Graduate Research Assistant</td>
<td>C.E.</td>
</tr>
<tr>
<td>Nair, Dhileepan</td>
<td>Graduate Student</td>
<td>C.E.</td>
</tr>
<tr>
<td>Neary, Vincent</td>
<td>Graduate Research Assistant</td>
<td>C.E.</td>
</tr>
<tr>
<td>Nehrkorn, Ted W.</td>
<td>Graduate Research Assistant</td>
<td>C.E.</td>
</tr>
<tr>
<td>Paterson, Eric</td>
<td>Hunter Rouse Fellow</td>
<td>M.E.</td>
</tr>
<tr>
<td>Pokorny, Mike</td>
<td>Graduate Research Assistant</td>
<td>C.E.</td>
</tr>
<tr>
<td>Rees, Todd H.</td>
<td>Graduate Research Assistant</td>
<td>C.E.</td>
</tr>
<tr>
<td>Name</td>
<td>Position</td>
<td>Program</td>
</tr>
<tr>
<td>---------------------</td>
<td>---------------------------------</td>
<td>------------</td>
</tr>
<tr>
<td>Rhee, Shin-Hyung</td>
<td>Graduate Research Assistant</td>
<td>M.E.</td>
</tr>
<tr>
<td>Serre, Mark</td>
<td>Graduate Student</td>
<td>C.E.</td>
</tr>
<tr>
<td>Sinha, Sanjiv</td>
<td>Graduate Research Assistant</td>
<td>C.E.</td>
</tr>
<tr>
<td>Sirviente, Ana</td>
<td>Graduate Student</td>
<td>M.E.</td>
</tr>
<tr>
<td>Smith, Brennan</td>
<td>Graduate Research Assistant</td>
<td>C.E.</td>
</tr>
<tr>
<td>Tahara, Yusuke</td>
<td>Graduate Research Assistant</td>
<td>M.E.</td>
</tr>
<tr>
<td>Teal, Martin</td>
<td>Graduate Research Assistant</td>
<td>C.E.</td>
</tr>
<tr>
<td>Unnikrishna, P.V.</td>
<td>Graduate Research Assistant</td>
<td>C.E.</td>
</tr>
<tr>
<td>Walter, Joel</td>
<td>Graduate Student</td>
<td>M.E.</td>
</tr>
<tr>
<td>Wang, Ching-Chung</td>
<td>Graduate Research Assistant</td>
<td>C.E.</td>
</tr>
<tr>
<td>Wasif, Mir Ali</td>
<td>Graduate Research Assistant</td>
<td>C.E.</td>
</tr>
<tr>
<td>Weber, Larry</td>
<td>Graduate Research Assistant</td>
<td>C.E.</td>
</tr>
<tr>
<td>Werner, Mark</td>
<td>Graduate Student</td>
<td>C.E.</td>
</tr>
<tr>
<td>Yoon, Joon-Yong</td>
<td>Graduate Research Assistant</td>
<td>M.E.</td>
</tr>
</tbody>
</table>