OVERVIEW

Memo

To: New IIHR Students and Staff  
From: Larry Weber, IIHR Director  
Date: October 2, 2015

Welcome to IIHR—Hydroscience & Engineering (IIHR), and to a new school year! We’re very pleased you’ve chosen to continue your education and professional development at our world-renowned research institute. I know you will find your studies here both rewarding and fascinating.

IIHR’s mission focuses on education, research, and public service in hydraulic engineering and fluids research. Our flagship facility is the historic C. Maxwell Stanley Hydraulics Laboratory (SHL) on the banks of the Iowa River. This iconic structure has spanned almost the entire 90-plus year history of the institute, and has for many of us come to represent the magnificent foundation upon which the IIHR of today is built. If you are not housed in SHL, I hope you will have an opportunity to spend time here.

IIHR is a unit of the University of Iowa’s College of Engineering. At IIHR, you’ll find that students, faculty members, and research engineers work together to understand one of the world’s greatest resources—water. You’ll benefit from IIHR’s comprehensive multidisciplinary approach, which includes basic fluid mechanics (including water, air, and blood), laboratory experimentation, and computational approaches.

You’ll gain hands-on experience through close cooperation with faculty members on research projects funded by industry, government, and other organizations. Though IIHR is a relatively small organization, it has long held a major role in the worldwide effort to understand and utilize water and its flow.

A quick note about our name, because so many people ask: originally, IIHR was an acronym for the Iowa Institute of Hydraulic Research. In 2002, our name was officially changed to IIHR—Hydroscience & Engineering to better reflect the broad scope and modern multidisciplinary nature of the institute’s focus. The acronym “IIHR” is retained to reflect our rich history and the past century’s achievements.

At the moment, space is tight in SHL. We are working hard to accommodate our students with workspace in SHL and our other facilities, but it will take a short time to sort things out. Thank you for your patience.

Again, welcome to IIHR and to an exciting new chapter in your academic life! I look forward to getting to know you better as the year progresses. Please do not hesitate to arrange a meeting with me if I can be of help in any way.

Larry Weber  
107-C SHL  
Office: 335-5597/Email: larry-weber@uiowa.edu

P.S. The information in this packet can also be found online at www.iihr.uiowa.edu/facilities/support-services/documents.
IIHR Staff

The IIHR staff includes skilled and highly-qualified individuals from a variety of disciplines and areas of expertise:

- Research engineers, drawn from the UI departments of:
  - Civil and Environmental Engineering
  - Mechanical Engineering
  - Biomedical Engineering
  - Earth and Environmental Sciences
  - Geographical and Sustainability Sciences
  - Etc.
- Staff who hold full-time appointments with IIHR
- Postdoctoral research associates
- Visiting faculty and researchers
- Research scientists, associates, and assistants concurrently pursuing advanced degrees
- Support staff who provide the following services:
  - Administrative and financial support
  - Assistance with travel arrangements
  - Grant preparation and submission support
  - Research computing support
  - Machining, carpentry, electrical, and model construction support

The IIHR director leads the institute, and is ultimately responsible for all its endeavors, including staff activities, laboratory facilities, research procedures, reports, and finances. The director also pursues his own research and teaching interests. The director reports to the dean of the College of Engineering and to the UI vice-president for research, and ultimately to the university president. Research engineers directly supervise the various projects and graduate student–conducted investigations at IIHR.

The responsibilities of IIHR staff are summarized in the organizational chart on the next page; the areas of specialization of IIHR’s senior research staff and research scientists are listed on the following pages.
IIHR Facilities

The IIHR laboratories and shops include 10 buildings, listed below (a map is also available on page 4, or at http://www.iihr.uiowa.edu/facilities/annexes-labs-and-shops):

- C. Maxwell Stanley Hydraulics Laboratory (SHL) 100 S. Riverside Dr.
- Hydraulics Model Annex (HLMA) 129 Court St.
- Hydraulics East Annex (HLEA) 140 W. Harrison St.
- Hydraulics Wind Tunnel Annex (HWTA) 130 W. Harrison St.
- Hydraulics Oakdale Annex One (HA1) 2310 Old Farmstead Rd., UI Research Park
- Hydraulics Oakdale Annex Two (HA2) 2275 Old Farmstead Rd., UI Research Park
- James Street Laboratory (JSL) 2421 James St. #3, Coralville
- Hydraulics Wave Basin Facility (HWB) Old Farmstead Rd., UI Research Park
- Lucille A. Carver Mississippi Riverside Environmental Research Station (LACMRERS) 3388 Highway 22, Muscatine, Iowa
- Oakdale Iowa Geological Survey Building (OIGS) 2390 Old Farmstead Rd., UI Research Park
IIHR Research Engineers and Research Scientists/Areas of Specialization

Staff member name, address, phone number, email; area of specialty; degree, school, degree year; title, primary department

Abbreviations:  SHL—Stanley Hydraulics Laboratory  
SC — Seamans Center  
CPHB—College of Public Health Building  
ERF—Engineering Research Facility  
HWTA—Wind Tunnel Annex  
IATL—Iowa Advanced Technologies Laboratory  
JH — Jessup Hall  
SH — Schaeffer Hall  
WP—Water Plant  
TH—Trowbridge Hall

Larry J. Weber, 107C SHL, 335-5597, larry-weber@uiowa.edu  
Fish passage facilities, physical modeling, river hydraulics, hydropower, computational hydraulics, ice mechanics, water quality, and watershed processes; PhD, University of Iowa, 1993; Edwin B. Green Chair in Hydraulics; Professor, civil and environmental engineering; and Director, IIHR

Antonio Arenas Amado, 323-1 SHL, 384-2045, antonio-arenasamado@uiowa.edu  
Fish passage design, physically-based watershed simulations, and total dissolved gas modeling; PhD, University of Iowa, 2012; Assistant Research Scientist, IIHR

Kelly Baker, S316 CPHB, 384-4008, kelly-k-baker@uiowa.edu  
Occupational and environmental health; Assistant Professor, occupational and environmental health

Art Bettis, 209 TH, 335-1831, art-bettis@uiowa.edu  
Reconstruction of past landscapes and environments using data from physical and geochemical studies of deposits and soils, documenting rates of dust flux during the last glacial period, and restoration strategies for rivers and streams; PhD, University of Iowa, 1995; Professor, earth and environmental sciences

Allen Bradley, 523A SHL, 335-6117, allen-bradley@uiowa.edu  
Hydrology, hydroclimatology, and watershed modeling; PhD, University of Wisconsin-Madison, 1992; Professor, civil and environmental engineering

James Buchholz, 323B SHL, 335-5224, james-h-buchholz@uiowa.edu  
Unsteady aerodynamics of biologically-inspired underwater and aerial vehicles, urban microclimate and transport phenomena, and cardiovascular fluid mechanics; PhD, Princeton University, 2006; Assistant Professor, mechanical and industrial engineering

Pablo Carrica, 223D SHL, 335-6381, pablo-carrica@uiowa.edu  
Multiphase flow, computational fluid dynamics, and boiling and heat transfer; PhD, Instituto Balseiro (Argentina), 1993; Associate Professor, mechanical and industrial engineering
Alejandro Castro, 223B-1 SHL, alejandro-castro@uiowa.edu
Multiphase flow, computational fluid dynamics, boiling and heat transfer, and phase detection probes; PhD, University of Iowa, 2011; Assistant Research Scientist, IIHR

Kung-Sik Chan, 241 SH (Schaeffer Hall), 335-2849, kung-sik-chan@uiowa.edu
Time series analysis, chaos, semiparametric statistics, Markov Chain Monte Carlo, stochastic differential equations, stochastic processes, and ecological modeling; PhD, Princeton University, 1986; Professor, statistics and actuarial science

George Constantinescu, 323C SHL, 384-0630, george-constantinescu@uiowa.edu
Computational fluid dynamics, river mechanics, turbulence, and hydraulics; PhD, University of Iowa, 1997; Professor, civil and environmental engineering

David Cwiertny, 4136 SC, 335-1401, david-cwiertny@uiowa.edu
Pollutant fate and transport, and water and watershed treatment; PhD, Johns Hopkins University, 2006; Associate Professor, civil and environmental engineering

Kajsa Dalrymple, W339 AJB, 335-3360, kajsa-dalrymple@uiowa.edu
Intersections between science, communication, and public policy; PhD, University of Wisconsin-Madison, 2011; Assistant Professor, journalism and mass communication

Caroline A. Davis, 105 OIGS, 288-2886, caroline-davis@uiowa.edu
Water quality, nutrient fate and transport, biogeophysics, and near-surface environmental geophysics; PhD, University of Missouri-Rolla, 2009; Assistant Research Scientist, IIHR

Ibrahim Demir, 314 SHL, 335-5780, ibrahim-demir@uiowa.edu
Environmental information systems, data informatics, scientific visualization, data management, and web-based systems; PhD, University of Georgia, 2010; Adjunct Assistant Professor, civil and environmental engineering, and Assistant Research Engineer, IIHR

Jeff Dorale, 35A TH, 335-0822, jeffrey-dorale@uiowa.edu
Climate dynamics, karst hydrology, paleohydrology, and sea-level change; PhD, University of Minnesota, 2001; Associate Professor, earth and environmental sciences

William Eichinger, 523B SHL, 335-5403, william-eichinger@uiowa.edu
Environmental hydrology and fluid dynamics, surface-atmosphere interactions, atmospheric pollution control and remediation, atmospheric physics, and remote sensing; PhD, University of California-Davis, 1995; William D. Ashton Professor of Civil Engineering; Professor, civil and environmental engineering

Tori Forbes, W374 CB, 384-1320, tori-forbes@uiowa.edu
Synthesis and characterization of novel actinide-based nanotubes and molecular clusters, X-ray diffraction and scattering techniques, transport and mobility of nuclear materials in aqueous environmental systems, and radiochemistry; PhD, University of Notre Dame, 2008; Assistant Professor, chemistry
Keri Hornbuckle, 4126 SC, 384-0789, keri-hornbuckle@uiowa.edu
Cycling of organic contaminants in the Great Lakes, air pollution, and environmental engineering; PhD, University of Minnesota, 1996; Donald E. Bently Professor in Engineering; Professor and Chair, civil and environmental engineering; and Associate Dean for Academic Programs, College of Engineering

Chris Jones, 332 TH, 335-0589, christopher-s-jones@uiowa.edu
Water quality. Research Engineer, IIHR

Craig Just, 4111 SC, 335-5051, craig-just@uiowa.edu
Use of sensors to measure water quality at rapid intervals, use of mussels as living biosensors, and fate of pharmaceuticals in non-conventional wastewater treatment systems; PhD, University of Iowa, 2001; Assistant Professor, civil and environmental engineering

Witold F. Krajewski, 523D SHL, 335-5231, witold-krajewski@uiowa.edu
Hydrometeorology, remote sensing, and water resources systems; PhD, Technical University of Warsaw (Poland), 1980; Rose and Joseph Summers Chair in Water Resources Engineering; Professor, civil and environmental engineering; and Director, Iowa Flood Center

Anton Kruger, 523C SHL, 335-6287, anton-kruger@uiowa.edu
Hydrometeorology instrumentation, particle image velocimetry and image processing, and visualization and management of large geographic datasets; PhD, University of Iowa, 1991; Donald E. Bently Faculty Fellow of Engineering; and Professor, electrical and computer engineering

Drew Latta, 4105 SC, 335-5646, drew-latta@uiowa.edu
Aquatic redox reactions, fate and transport of groundwater contaminants, and geochemistry of major and trace metals; PhD, University of Iowa, 2010; Assistant Research Scientist, IIHR

Hans-Joachim Lehmler, 221 IREH, 335-4310, hans-joachim-lehmler@uiowa.edu
Disposition and metabolism of chiral environmental contaminants, toxicity of perfluorinated surfactants, and interaction of fluorinated materials with biological lipid assemblies; PhD, University of Bonn (Germany), 1995; Associate Professor, occupational and environmental health

Ching-Long Lin, 2406 SC, 335-5673, ching-long-lin@uiowa.edu
Level-set simulation of two-phase flow, free-surface turbulence, lattice-Boltzmann simulation of liquid-gas, liquid-liquid, and fluid-solid interactions for microfluidics, four-dimensional assimilation of atmospheric LiDAR data, and pulmonary flow; PhD, Stanford University, 1994; Professor, mechanical and industrial engineering

Ricardo Mantilla, 523E SHL, 335-5941, ricardo-mantilla@uiowa.edu
Surface hydrology, and river networks; PhD, University of Colorado, 2006; Assistant Professor, civil and environmental engineering

Corey Markfort, 323E SHL, 335-6168, corey-markfort@uiowa.edu
Environmental fluid mechanics, turbulence, atmospheric boundary layer, renewable energy and wind engineering, biosphere-atmosphere exchange, hydrology, water resources engineering, physical limnology, and earth systems dynamics and change; PhD, University of Minnesota, 2013; Assistant Professor, civil and environmental engineering
Juan Ezequiel Martin, 223-3 SHL, 335-6022, juan-martin@uiowa.edu
CFD and EFD; PhD, University of Illinois-Urbana-Champaign, 2009; Assistant Research Scientist, IIHR

Andres Martinez Araneda, 4105 SC, 335-6454, andres-martinez@uiowa.edu
Environmental contaminant fate and transport modeling, with emphasis in analyzing and simulating the behavior of organic pollutants in urban, remote, and industrial areas; PhD, University of Iowa, 2010; Adjunct Assistant Professor, civil and environmental engineering; and Associate Research Scientist, IIHR

Tim Mattes, 4112 SC, 335-5065, tim-mattes@uiowa.edu
Environmental biotechnology, oxidative biocatalysis, evolution of microbial biodegradation pathways, and application of genomics and proteomics techniques in the study of environmentally relevant microbial communities; PhD, Cornell University, 2004; Associate Professor, civil and environmental engineering

Maysam Mousaviraad, 223B-1 SHL, 335-7001, maysam-mousaviraad@uiowa.edu
Computational fluid dynamics, experimental fluid dynamics, and ship hydrodynamics; PhD, University of Iowa, 2010; Assistant Research Scientist, IIHR

Marian Muste, 302 SHL, 384-0624, marian-muste@uiowa.edu
Experimental methods in hydraulics and fluid mechanics, sediment transport, environmental fluid mechanics, and engineering education; PhD, University of Iowa, 1995; Adjunct Professor, civil and environmental engineering, and Research Engineer, IIHR

James Niemeier, 2 HWTA, 384-2918, james-niemeier@uiowa.edu
Water quality, nutrient fate and transport, biogeophysics, and near-surface environmental geophysics; PhD, University of Iowa, 2010; Assistant Research Scientist, IIHR

Jacob Odgaard, 4114 SC, 335-5213, jacob-odgaard@uiowa.edu
Hydraulic engineering, hydraulic structures, hydraulic modeling, hydroinformatics, environmental fluid mechanics, river engineering, river mechanics, sediment management in rivers, Iowa vanes, stream bank erosion protection, and fish passage facilities; PhD, Technical University of Denmark, 1966; Professor, civil and environmental engineering

Marcela Politano, 310 SHL, 335-6393, marcela-politano@uiowa.edu
Total dissolved gas modeling, two-phase flow modeling, numerical modeling of hydraulic transients, particle tracking and dispersion, heat and mass transfer, and computational fluid dynamics; PhD, Instituto Balseiro (Argentina), 2001; Adjunct Assistant Professor, civil and environmental engineering, and Associate Research Engineer, IIHR

Hamid Sadat Hosseini, 223-4 SHL, 335-5580, hamid-sadathosseini@uiowa.edu
Computational fluid dynamics, free surface flows, and ship hydrodynamics; PhD, University of Iowa, 2009; Assistant Research Scientist, IIHR

Yugo Sanada, 1 Hydraulic Wave Basin Annex, 319-467-4572, yugo-sanada@uiowa.edu
Ship hydrodynamics; PhD, Osaka University, Japan, 2007; Associate Research Scientist, IIHR
Michelle Scherer, 4105 SC, 335-5654, michelle-scherer@uiowa.edu
Fundamental and practical aspects of chemical contamination of aquatic environments, heterogeneous processes occurring in both natural and engineered systems, including surface redox reactions and adsorption/complexation phenomena, and understanding and modeling the kinetics of transformation reactions at the mineral-water interface; PhD, OGI School of Science and Engineering, 1998; Donald E. Bently Professor in Engineering; Professor and DEO, civil and environmental engineering

Keith Schilling, 340A TH, 335-1422, keith-schilling@uiowa.edu
Hydrogeology, hydrology, and nonpoint source pollution; PhD, University of Iowa, 2009; Adjunct Assistant Professor, earth and environmental sciences; Adjunct Assistant Professor, natural resource ecology and management, Iowa State University; Research Engineer, IIHR

Doug Schnoebelen, 323A SHL, 335-6061, douglas-schnoebelen@uiowa.edu
Water quality, hydrology and water chemistry, and geochemistry of groundwater; PhD, Indiana University, 1999; Adjunct Assistant Professor, earth and environmental sciences, Research Engineer, IIHR, and Director, Lucille A. Carver Mississippi Riverside Environmental Research Station (LACMRERS)

Jerry L. Schnoor, 4112 SC, 335-5649, jerald-schnoor@uiowa.edu
Water-quality modeling and dispersion processes; PhD, University of Texas, 1975; Allen S. Henry Chair in Engineering; and Professor, civil and environmental engineering

Ananya Sen Gupta, 4016 SC, 335-5947, ananya-sengupta@uiowa.edu
Shallow water acoustic channel estimation and tracking, interference mitigation in multi-user detection and equalization; PhD, University of Illinois-Urbana-Champaign, 2006; Assistant Professor, electrical and computer engineering

Bongchul Seo, 323D SHL, 384-2042, bongchul-seo@uiowa.edu
Radar hydrology and rainfall uncertainties; PhD, University of Iowa, 2010; Assistant Research Scientist, IIHR

Scott Small, 423-4 SHL, 335-5956, scott-small@uiowa.edu
Scientific computing and numerical analysis; PhD, University of Iowa, 2011; Assistant Research Scientist, IIHR

Charles Stanier, 4122 SC, 335-1399, charles-stanier@uiowa.edu
Laboratory investigation and field sampling of air pollution, particularly aerosol particles, computation simulations of atmospheric, aerosol chemistry, and health effects of airborne contaminants; PhD, Carnegie Mellon University, 2003; Associate Professor, chemical and biochemical engineering

Fred Stern, 223C SHL, 335-5215, frederick-stern@uiowa.edu
6DOF viscous ship hydrodynamics, high performance multi-criteria CFD-based optimization for ship design, towing tank maneuvering test flow-map measurement system, and integration of simulation technology into undergraduate engineering courses and laboratories; PhD, University of Michigan, 1980; George D. Ashton Professor of Hydrosence and Engineering; and Professor, mechanical and industrial engineering
Eric Tate, 302 JH, 335-0259, eric-tate@uiowa.edu
Development of social vulnerability and resilience indicators, assessment of uncertainty and sensitivity in geospatial models, and GIS modeling in support of local and regional flood hazard mitigation; PhD, University of South Carolina, 2011; Assistant Professor, geographical and sustainability sciences

H.S. Udaykumar, 2408 SC, 384-0832, hs-kumar@uiowa.edu
Numerical methods to materials processing, biofluid mechanics, elasto-plastic wave propagation in impacting media, fluid-structure interactions, and advanced numerical schemes for moving boundary problems; PhD, University of Florida, 1994; Professor, mechanical and industrial engineering

Sarah Vigmostad, 1420 SC, 384-2008, sarah-vigmostad@uiowa.edu
Computational fluid mechanics, cardiovascular biomechanics, multiscale modeling, fluid-structure interactions; PhD, University of Iowa, 2007; Assistant Professor, biomedical engineering

Gabriele Villarini, 306 SHL, 384-0596, gabriele-villarini@uiowa.edu
Hydrometeorology, climatology, extreme events, climate change, hurricanes, seasonal forecast, remote sensing of rainfall, and applied statistics; PhD, University of Iowa, 2008; Assistant Professor, civil and environmental engineering

Zhaoyuan Wang, 223E SHL, 335-6293, zhaoyuan-wang@uiowa.edu
CFD, free surface and interfacial flows, VOF and level set methods, free surface tracking, and surface tension modeling; PhD, University of Texas, 2006; Assistant Research Scientist, IIHR

Frank H. Weirich, 217 TH, 335-5272, frank-weirich@uiowa.edu
Geomorphology and related hydrologic processes, sediment transport and reservoir sedimentation, and watershed response to environmental changes; PhD, University of Toronto (Canada), 1982; Associate Professor, earth and environmental sciences

Jianming Yang, 223F SHL, 335-5749, jianming-yang@uiowa.edu
Fluid dynamics, fluid-structure interactions, and scientific computing; PhD, University of Maryland, 2005; Adjunct Professor, mechanical and industrial engineering, and Research Scientist, IIHR

Hyunse Yoon, 223B-2 SHL, 335-5257, hyun-se-yoon@uiowa.edu
Ship hydrodynamics; PhD, University of Iowa, 2009; Assistant Research Scientist, IIHR

Nate Young, 423C SHL, 384-1732, nathan-young@uiowa.edu
Ecohydraulics, field measurements, and freshwater mussel habitats; PhD, University of Iowa, 2006; Adjunct Associate Professor, civil and environmental engineering; Associate Research Engineer, IIHR; and Associate Director, Iowa Flood Center

You-Kuan Zhang, 121 TH, 335-1806, you-kuan-zhang@uiowa.edu
Subsurface hydrology, watershed hydrology, ecohydrology, field observation and modeling flow and contaminant transport in soil and aquifers, and analytical, numerical, geostatistical, and stochastic methods in subsurface hydrology; PhD, University of Arizona, 1990, Professor, earth and environmental sciences
October 2, 2015

Dear New IIHR Students and Staff,

Welcome to IIHR! We’d like to introduce you to the administrative staff at IIHR; administrative staff members conduct essential activities that support the research, education, and service that are at the core of IIHR’s mission. The work falls into two main categories:

**General Administration:** Carmen Langel, director of development and communications, leads administrative staff who perform duties related to external communication (i.e., the website, newsletters, brochures, etc.), internal communications (i.e., *IIHR Weekly Update* emails), development (grant preparation, fundraising, etc.); and university and IIHR policy questions in these areas. Langel works closely with IIHR research staff to develop and submit grant and contract proposals. In addition, administrative staff members plan and set up for meetings and presentations, serve as IIHR’s immigration liaison, and act as point of contact to schedule meetings with IIHR Director Larry Weber.

**Accounting/Finance and Human Resources:** Teresa Gaffey, director of finances and human resources, manages and coordinates all IIHR financial operations, budgets, grants, reports, and activities. Gaffey and her staff also serve as IIHR’s human resources representatives. She and her team process staff and student employment paperwork and tuition payments. They also provide accounting support services as needed, including the processing of travel vouchers, payroll, purchasing requisitions, procurement card expenses, and reimbursements. Accounting staff members also collect payments from staff and students for personal printing, fax, and copy charges, as well as distributing office and building keys.

Please contact us with any questions or needs you may have. We wish you the best in all your educational endeavors!

Sincerely,

Teresa Gaffey  
Director of Finances  
107 SHL  
Office: 335-6166  
Email: teresa-gaffey@uiowa.edu

Carmen Langel  
Director of Development and Communication  
107-B SHL  
Office: 335-5481  
Email: carmen-langel@uiowa.edu
**Larry Weber**, Director, IIHR  
In his administrative role, Larry Weber leads IIHR’s team of administrative support staff and guides the institute’s overall policies and progress.  
- 107C SHL, 335 5597  
- larry-weber@uiowa.edu

**Sara Conrad**, Research Support Manager  
Assists in grant writing and budget preparation, contractual analysis (including MOUs, NDAs, CDAs, and sponsored research agreements), and acts as a liaison between IIHR and University of Iowa compliance professionals.  
- 133-4 SHL, 384-0701  
- sara-conrad@uiowa.edu

**Megan Delaney**, Administrative Services Coordinator  
Provides administrative support services as needed for the IGS group, including management of vehicles, building issues, awards, Pcards, website management, and printing access.  
- 327 TH, 384-0611  
- megan-delaney@uiowa.edu

**Melissa Eckrich**, Accountant  
Provides accounting services as needed, including processing employment paperwork, payroll, and purchasing requisitions.  
- 133-8 SHL, 335-5845  
- melissa-eckrich@uiowa.edu
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<th>Name</th>
<th>Position</th>
<th>Responsibilities</th>
<th>Contact Information</th>
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| **Teresa Gaffey**           | Director of Finances and Human Resources      | Manages and coordinates all IIHR financial operations, budgets, grants, reports, and activities, including supervision of three accounting staff members. Also serves as IIHR’s human resources representative.                                    | • 107A SHL, 335-6166  
  • teresa-gaffey@uiowa.edu |
| **Sandy Gerard**            | Accountant                                     | Provides accounting support services as needed, including processing payments and receipt of purchased items, resolving discrepancies and vendor issues, and processing travel vouchers, procurement card expenses, and reimbursements. Also handles human resources functions related to hiring and other personnel matters. | • 1 HWTA, 335-5217  
  • sandra-gerard@uiowa.edu |
| **Heather Hunter**          | Secretary/Receptionist                         | Provides secretarial services as needed, including greeting guests; answering general lab phone and directs calls; managing facilities maintenance and repair; coordinating copy and fax machine repair; managing furniture and office machine acquisition and repair; routing proposals; running errands; and ordering and inventorying office supplies. | • 100 SHL, 335-5237  
  • heather-a-hunter@uiowa.edu |
| **Carmen Langel**           | Director of Development and Communication     | Administers communication, development, and other non-technical aspects of IIHR activity; handles university and IIHR policy questions; makes graduate assistant research assignments, and writes grant proposals and other reports. Supervises three administrative staff members. | • 107B SHL, 335-5841  
  • carmen-langel@uiowa.edu |
| **Laura Myers**             | Administrative Services Specialist            | Provides administrative support as needed, including website updates and support; as well as planning/set-up for meetings and presentations. Also serves as immigration liaison and point of contact to schedule meetings with IIHR Director Larry Weber. | • 107-1 SHL, 335-5253  
  • laura-l-myers@uiowa.edu |
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<th><strong>Jennie Portwood</strong>, Administrative Services Coordinator</th>
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<td>Provides accounting services as needed, including management of long distance, Pcards, printing access, travel, keys, cash receiving, fieldwork plans, vehicles, and more.</td>
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<td>- 107 SHL, 353-3742</td>
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<tr>
<td>- <a href="mailto:jennifer-portwood@uiowa.edu">jennifer-portwood@uiowa.edu</a></td>
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<th><strong>Aimee Reische</strong>, Research Support Manager</th>
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<td>Provides pre- and post-award grant support management.</td>
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<td>- 107 SHL, 335-5233</td>
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<tr>
<td>- <a href="mailto:aimee-reische@uiowa.edu">aimee-reische@uiowa.edu</a></td>
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<th><strong>Jackie Hartling Stolze</strong>, Lead Communication Specialist</th>
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<td>Develops content for website, newsletters, brochures, and other promotional materials in support of IIHR activities. Serves as project manager on major publications, working with external contractors. Also serves as IIHR’s archivist.</td>
</tr>
<tr>
<td>- 133-6 SHL, 335-6410</td>
</tr>
<tr>
<td>- <a href="mailto:jackie-stolze@uiowa.edu">jackie-stolze@uiowa.edu</a></td>
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<th><strong>Breanna Zimmerman</strong>, Public Relations Coordinator</th>
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<td>Assists in the development and implementation of communication and outreach programs for the Iowa Flood Center (IFC); and serves as an effective and knowledgeable liaison between IFC staff and external stakeholders, including agency personnel, policymakers, community leaders, and the general public.</td>
</tr>
<tr>
<td>- 133-7 SHL, 384-1729</td>
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<tr>
<td>- <a href="mailto:breanna-zimmerman@uiowa.edu">breanna-zimmerman@uiowa.edu</a></td>
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RESEARCH COMPUTING SUPPORT

October 2, 2015

Dear New IIHR Students,

Welcome to IIHR!

Please look over the following materials related to the IIHR’s support of research computing. I believe research computing is an identifiable subset of Information Technology that specializes in the kind and type of computation and support resources needed to execute a successful research program. Research computing focuses on acquisition, processing, storage, presentation, and archiving of research materials, data, codes, and publications involved in vibrant research activity. My group, Research Computing Support (RCS), strives to provide an efficient and effective computational platform for your research and leaves the day-to-day IT-related functions, such as email, to groups on campus that specialize in those services. RCS is, however, your point of contact for any IT-related question, and we will gladly find a solution provider if we don’t provide the support function ourselves.

Please feel free to contact me with any questions you may have. I look forward to working with you.

Sincerely,

Mark Wilson
Director of Research Computing
423A SHL
Office: 335-5223
Email: mark-wilson@uiowa.edu
Overview

Research Computing Support (RCS) staff members enable a wide range of research activities within IIHR. Staff recommend, purchase, maintain, and dispose of computing- and technology-related equipment, software, communication, networking, and storage devices. RCS provides the computing foundation for all activities of IIHR, including compute, web, ftp, authentication, storage, and backup servers, as well as specialized software and laboratory data acquisition devices and codes. RCS staff members assist with access to IIHR-, College of Engineering-, and university-provided resources and services, ranging from desktop systems to High Performance Computing (HPC) systems and techniques.

Meet the Research Computing Support Staff

| Mark Wilson, Principal Engineer, Director of Research Computing |  |
| Administers all research-oriented computing at IIHR, including experimental data acquisition design, computation, assistance with complex computational fluid dynamics (CFD) flow models, systems and network administration, and creation of graphic arts. Supervises research computer support staff and student technical assistants. |
| 423A SHL, 335-5223 | mark-wilson@uiowa.edu |

| Brian Miller, Senior Systems Administrator |  |
| Designs, installs, and configures networked computing systems, including administration, security, and maintenance of hardware and software. Maintains operating system software and user account management in a blended Windows, Linux, and Mac OS environment. |
| 423F SHL, 335-5321 | brian-s-miller@uiowa.edu |

| Eric Prill, Systems Administrator |  |
| Assists in the design, installation, and configuration of networked computing systems, including administration, security, and maintenance of hardware and software. Maintains operating system software and user account management in a blended Windows, Linux, and Mac OS environment |
| 423 SHL | eric-prill@uiowa.edu |
Jacob King Applications Developer
Develops web-based database applications to support IIHR research and internal operations, and provides maintenance and support for these applications, as well as managing web presentation of information.

• 423-1 SHL, 335-6272
• jacob-king@uiowa.edu

Vacant Position, Creative Media Specialist
Leads IIHR in graphics arts and production in 2-D and 3-D illustrations, posters, photos, video, and public displays. Designs and executes accurate 3-D models in support of IIHR projects.

• 423 SHL

Where We Are:

The IIHR Research Computing Support group has offices on the fourth floor of SHL, with an assembly and repair area in room 27 SHL (below room 127 at the south end of SHL – take the south steps down one level and turn north).

Hours:

Computing assistance is available from our assembly/repair area in room 27 SHL. This area is open Monday through Friday and follows the flexible hours of the student workers. If you need assistance and this area is not open, please contact Brian Miller or any of the RCS staff.

Equipment and Resources:

IIHR maintains a diverse set of computing resources and facilities. The following is a partial list of equipment, services, and software available to all IIHR affiliates and students.

• The primary compute platform is a High-performance Compute (HPC) cluster called Helium. It is a shared system built from Hewlett-Packard DL160 nodes that features three, 304 total cores, 10.6 TB of memory, more than 750 TB of storage, a 40 Gbps Voltaire Infiniband QDR message passing fabric for MPI communications, and three Ethernet networks for management and NFS storage. The cluster queuing system, Sun Grid Engine, provides access to very large jobs, well beyond the limits of the dedicated hardware for any individual user. The programming environment includes OpenMP, MPI, and the Intel and GNU compiler and tool suites. The cluster was acquired with funding from the NIH, AFOSR, and a number of individual researcher-led...
contributions, in addition to monies from the College of Engineering and the university provost. IIHR operates it in conjunction with ITS and a group of collaborative researchers.

- A second HPC system, Neon, was acquired in the fall of 2013 to augment HPC resources available to IIHR researchers. Like Helium, Neon is operated by IIHR in conjunction with ITS and a group of collaborative researchers from around the university. Neon is a shared system with, currently, 1800 cores, 4 TB memory, 500 TB of storage, and 40 Gbps Infiniband QDR message passing fabric.

- Smaller clusters are dedicated to a set of specialized applications, such as PIV rendering and Fluent CFD jobs for dedicated clients.

- HPC at IIHR is augmented by 10 Silicon Mechanics storage units, providing 750 TB of storage in a RAID 60 configuration. This storage space is replicated to an offsite location with hourly snapshots taken for user-invoked file recovery. IIHR also operates dedicated project storage arrays.

- Very large-scale computations are done at national and international computation centers accessed through longstanding IIHR-center relationships. In addition to the NSF and DOD/DOE centers, IIHR has developed a continuing collaboration with the National Center for High Performance Computing (NCHC) in Taiwan.

- Supporting the local centralized facilities are 60 Linux workstations and more than 240 individual PCs running MS Windows 7. There are 24 PC-based servers handling web, ftp, security, and specialized database services. In addition, a number of Blu-Ray mass-storage devices, publication-quality color printers, scanners, cameras, and other peripherals are in use.

- This hardware is complemented by a carefully selected set of public domain, commercial, and proprietary software packages that include Tecplot, Gridgen, Fluent, FlowLab, Matlab, Origin, ERDAS, ERMapper, ERSI, and the core GNU utilities. Additionally, software such as AutoCAD, MS Windows, MS Office, OS X, Mathematica, IDL, SigmaPlot, and SAS, are used under university-wide site licenses.
Phase One (first half) of the Helium Cluster, located in Lindquist Data Center
October 2, 2015

Dear New IIHR Students and Staff,

I would like to sincerely welcome you to IIHR, and I hope your work here will be successful and rewarding. IIHR provides staff and resources to assist and support your research activities. Our goal in IIHR Engineering Shops & Services (IESS) is to provide high-quality resources that will play a key role in your success as students and researchers. Please take a few moments to read the following information regarding the use of our shops and facilities. These guidelines and policies are designed to ensure a safe, organized, and professional work environment for all who work, study, or conduct research using the facilities and/or assistance of the IESS staff.

Please don’t hesitate to contact me with any questions you may have. I look forward to meeting you and assisting with your research needs.

Sincerely,

Troy Lyons
Director of Engineering Services
519 SHL
Office: 335-5319
Email: troy-lyons@uiowa.edu
Overview

IIHR Engineering Shops & Services (IESS) staff support IIHR research and educational activities in the laboratories, as well as in the field. Staff develop, construct, and maintain research apparatus, equipment, models, and facilities to support IIHR’s educational and research mission. Staff strive to achieve these goals in the most responsive, accurate, efficient, and cost-effective means possible.

Key resources included in the IESS group include IIHR’s Mechanical, Electronics, and Machine Shops, located in the South Campus annexes. The IESS group currently employs 11 full-time staff and six undergraduate student employees. Please visit the IIHR website for a complete list, description, and interactive map of the facilities: http://www.iihr.uiowa.edu/facilities/.

Meet the Engineering Services Staff:

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<tr>
<th>Name</th>
<th>Title</th>
<th>Contact Information</th>
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| Troy Lyons, M.S., P.E., Principal Engineer, Director of Engineering Services | Coordinates and directs engineering support services and provides engineering support related to design and conduct of hydraulic modeling studies. Serves as PI on numerous projects and contracts. | 519 SHL, 335-5319  
|                       |                                            | troy-lyons@uiowa.edu                                                                |
| Brandon Barquist, Engineering Specialist, Shop Manager | Coordinates personnel and resources related to the design and construction of specialized flumes and physical models for IIHR research projects. Also supervises the construction of fluids-teaching laboratory equipment and maintenance of IIHR facilities. | 5 HLMA, 384-3273  
|                       |                                            | brandon-barquist@uiowa.edu                                                          |
| Andy Craig, Hydraulic Engineer | Provides engineering support for a wide variety of research projects. Specializes in physical hydraulic modeling and river surveys. Expert in GIS, LabVIEW, and other engineering data software programs. | 3 HWTA, 384-2801  
<p>|                       |                                            | <a href="mailto:andy-craig@uiowa.edu">andy-craig@uiowa.edu</a>                                                               |</p>
<table>
<thead>
<tr>
<th><strong>Christian Borgwardt</strong>, Engineering Coordinator</th>
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<tr>
<td>Provides skilled machining and fabrication support for laboratory models and instrumentation.</td>
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<tr>
<td>- 4 HMA, 384-2017</td>
</tr>
<tr>
<td>- <a href="mailto:christian-borgwardt@uiowa.edu">christian-borgwardt@uiowa.edu</a></td>
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<tr>
<th><strong>Jason Knox</strong>, Engineering Assistant</th>
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<tr>
<td>Provides drafting support for laboratory model construction, instrumentation design, and support for CNC machines. Specializing in 3D drawings using Creo (ProE) and SolidWorks.</td>
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<tr>
<td>- HWMA Loft, 335-6087</td>
</tr>
<tr>
<td>- <a href="mailto:jason-knox@uiowa.edu">jason-knox@uiowa.edu</a></td>
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<tr>
<th><strong>Jim Goss</strong>, Lead Welding Foreman</th>
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<td>Provides support for laboratory model construction, with expertise in welding, carpentry, metal-working, and painting.</td>
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<tr>
<td>- HLMA, 335-5249</td>
</tr>
<tr>
<td>- <a href="mailto:james-goss1@uiowa.edu">james-goss1@uiowa.edu</a></td>
</tr>
<tr>
<td>Name</td>
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<td>-----------------------</td>
</tr>
<tr>
<td>Alan McCarville</td>
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<tr>
<td>Robert Nace</td>
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<tr>
<td>Ryan Prochaska</td>
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<td>Rick Saeugling</td>
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Hours:
Mechanical Shop hours are 7:30 a.m.–5 p.m., Monday through Thursday, and 7:30 a.m.–4:30 p.m. on Friday. IIHR buildings are open during these work hours, but must remain locked at all other times. Doors must not be unlocked or propped open outside stated working hours.

Safety
IIHR takes the safety of students, staff, and faculty very seriously. Due to the ongoing construction and research projects in many of our laboratories, safety precautions are paramount. Mandatory training to operate lasers, power equipment, forklifts, scissors lift, trailers, boats, etc., is required for all students, faculty, and staff who will be using the equipment. Due to safety and liability concerns, much of the equipment cannot be used by students without proper training AND direct supervision of shop staff. Contact Brandon Barquist regarding permission to use equipment and required safety training.

Equipment and Resources:
For the convenience of Mechanical Shop personnel, equipment and tools are kept in unlocked, unsecured areas of several IIHR buildings. Although it may appear as if these tools are available for anyone to use, this is not the case. The following is intended to clarify the uses, purposes, and procedures related to IIHR Mechanical Shops resources.

- **Hand and Power Tools:** Shop tools and equipment are essential to our daily work. They are also expensive and potentially dangerous. *ONLY Mechanical Shop personnel are allowed to use power equipment.* Many Mechanical Shop machines can amputate a limb without warning or effort. The hand tools, while much safer to use, are generally not “loaned out.” The shop has hand tools that are dedicated to student and/or researcher use wherever needed in our facilities. If these tools do not seem to be available, or if special tools are required, please talk to Mechanical Shop Supervisor Brandon Barquist.

- **Pumps:** *Start-up, shut-down, unattended operation, maintenance, high voltage.* Many types of pumping equipment are available, each with its own peculiarities. While some pumps can be used unattended, others cannot. Some are simple to operate, and others are complex. **Pump operations should be reviewed with Brandon Barquist prior to use.**

- **Electrical Power:** *Building electrical supply, overloading, interruptions, locations, ground fault interrupters.* Electricity and water do not mix. Please discuss power usage with Brandon Barquist if it is beyond what is required to light your work area or operate your computer. Annually, the fire marshal cites IIHR for any improper use of electrical power near wet areas.

- **Vehicles:** IIHR maintains a variety of vehicles for the use of faculty, staff, and occasionally students. Requests for vehicle use should generally be directed to Laura Myers (IIHR main office) or Brandon Barquist (Mechanical Shop), depending on which vehicle is requested. IIHR vehicles may be used for authorized IIHR business only.
• **Protocols:** Income from research grants and contracts provides funding for IIHR Engineering Shops & Services and their personnel and supplies/equipment. The shop receives no state funding. Therefore, an IIHR account number is required for almost any work done in the shop. Time and materials will be charged to this account number.

• **Protocol for Shop Requests:**
  o Task requests must be approved by the student’s advisor or the project PI.
  o Task requests should be directed to Brandon Barquist.
  o If possible, shop staff requires drawings and/or sketches, or at minimum written descriptions of the requested work.
  o Shop staff and the work requester must come to an agreement on the maximum charge and completion time frame for the task or project.
  o The requester should clearly communicate any specific or unusual requirements.

• **Use of Shop Materials:** The shop has a large inventory of miscellaneous materials, fasteners, widgets, gizmos, and otherwise interesting stuff, which is kept on hand for a wide variety of needs. In many cases, these items can be donated or lent to research efforts. Other items must remain available for shop use. Students and others should talk to Brandon Barquist about use of these items.

• **Boats:** IIHR has a variety of boats and instrumentation available for use in field data collection programs. Available boats range from kayaks for small streams and backwater areas to large multi-engine boats suitable for large navigable rivers and lakes. Boat and instrumentation reservations should be coordinated through Brandon Barquist. IIHR has strict boat operator requirements and can provide a qualified boat operator with advance notice. Boat operator training can be provided on an as-needed basis for longer term projects. Training should be discussed with and coordinated through Troy Lyons.

• **Recharge Rates:** IIHR maintains a wide variety of equipment and instrumentation, including state-of-the-art survey equipment, flow meters, velocity meters, generators, boats, vehicles, trailers, field laptops, and many other items that are available for lease to projects on a first-come first-served basis. The revenue generated from use of this equipment is used to maintain existing equipment in good working order, update equipment as needed, and invest in additional equipment. See Brandon Barquist regarding rates, reservations, and use of the equipment.