Summary of Activities

Civil and Environmental Engineering Department
College of Engineering
The University of Iowa
Iowa City, IA 52242 USA

For the period

January 2000 – December 2000
# Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>1</td>
</tr>
<tr>
<td>BS Degrees Awarded</td>
<td>3</td>
</tr>
<tr>
<td>Graduate Students (PHD)</td>
<td>4</td>
</tr>
<tr>
<td>Graduate Students (MS)</td>
<td>6</td>
</tr>
<tr>
<td>ASCE</td>
<td>8</td>
</tr>
<tr>
<td>CEE Faculty</td>
<td>10</td>
</tr>
<tr>
<td>Advisory Board</td>
<td>12</td>
</tr>
<tr>
<td>Awards and Recognition</td>
<td>13</td>
</tr>
<tr>
<td><strong>Publications</strong></td>
<td></td>
</tr>
<tr>
<td>Books</td>
<td>14</td>
</tr>
<tr>
<td>Book Chapters</td>
<td>14</td>
</tr>
<tr>
<td>Journal Articles</td>
<td>15</td>
</tr>
<tr>
<td>Conference Papers</td>
<td>20</td>
</tr>
<tr>
<td>Reports</td>
<td>26</td>
</tr>
</tbody>
</table>
INTRODUCTION

This Summary of Activities of the Department of Civil and Environmental Engineering (CEE) was prepared for several purposes. It collectively reports the activities of CEE’s faculty, staff, and students for calendar year 2000. Though most of those activities typically are reported in a scattered assortment of documents, such as the summary of activities that each faculty member prepares, and the lists assembled for the graduation ceremonies held by the University of Iowa, no other report describes the collective outcomes of work done by the people directly affiliated with CEE. The Summary consequently comprises a form or profile of CEE, and thereby serves as a convenient means for introducing CEE to its constituents as well as introducing CEE to visitors.

The Summary lists CEE’s graduating classes of senior-undergraduate and graduate students. Additionally, it lists the publications, conference presentations, theses, and awards of CEE’s faculty, staff, and students. The present Summary does not list all aspects of faculty, staff, and student activities. For example, it does not list all active grants of projects pursued by faculty, staff, and students. Also, the activities of Adjunct Faculty are incompletely documented. Future Summaries may include those information items.

CEE’s undergraduate class numbered an average of 140 students during the Spring and Fall Semesters of this year. This number does not include the approximately 15 undeclared Freshman students who typically enter CEE in their Sophomore year. Thirty Senior students attained the Bachelor Degree (majoring in Civil Engineering) in 2000. These numbers are down on student numbers in the preceding five years, and are indicative of a nation-wide dip in the overall number of students entering civil-engineering programs. The dip in undergraduate-student enrollment was a primary concern for CEE during 2000. It is anticipated that CEE’s undergraduate enrollment will rise during 2001. The optimal number of under-graduate students is estimated to be about 180, taking into account faculty numbers and the capacity of teaching facilities.

The Senior Class of 2000 has been an exceptionally energetic and gregarious body of students, especially through the activities of the Student Chapter of the American Society of Civil Engineers. A highlight of this year was the Chapter’s organizing and hosting of the Midwest Regional Concrete Canoe contest. This event, illustrated subsequently in the Summary, was held at Lake McBride on a superb mid-April day. The Chapter did well also in the Midwest Regional of the Steel-Bridge Contest, and went to the national finals of that contest. In recognition of the Chapter’s great activities during this year, ASCE’s President, Robert W. Bein, awarded the Chapter an ASCE Letter of Honorable Mention. Additionally, ASCE awarded the Chapter a Letter of Significant Improvement, reflecting the Chapter’s continued advancement. These two letters from ASCE carry substantial prestige and reflect nicely on the Chapter’s faculty advisers.

A further student organization, the local chapter of Chi Epsilon, also was very active. Besides its usual efforts at inducing Senior students (and the odd faculty member), the Chapter very supportively conducted a mentoring program for Freshman, Sophomore, and Junior students.
A total of 100 graduate students were advised by, and worked with, CEE faculty and staff this year. CEE’s graduate-student body comprised 54 Masters students and 46 Ph.D. students. During 2000, 12 students attained the Masters Degree and 8 attained the Ph.D. Degree. The total number of CEE graduate students is down slightly from prior years. As with the dip in undergraduate enrollment, the dip in graduate enrollment reflects a national trend. CEE faculty and staff are busy with several recruiting activities aimed at boosting graduate-student enrollment to approximately 120.

On November 8, CEE held the first meeting of its Professional Advisory Board. This Summary lists the Board members. The meeting was very successful, providing guidance and suggestions of use for various aspects of the CEE activities. For example, Board members made useful suggestions regarding curriculum adjustments contemplated by CEE faculty.

With regard to curricular matters, CEE faculty members have this year focused on three significant activities that are not reflected in this Summary. A major effort has been the early preparation of procedures and assembly of information in readiness for the impending accreditation review that CEE faces in the Fall of 2002. Two CEE faculty members have played leading roles in developing the Engineering College’s overall preparation for the review. A further major effort has concerned the revamping of the College’s Core Curriculum. CEE faculty have been closely involved in an extensive College-wide effort aimed at implementing the new curriculum during the Fall of 2002. The third major effort has been the adjustment of CEE’s program curriculum. The adjustment entails a substantial overhaul of the present program curriculum. This effort will continue through next year, and likely will be discussed further in the Summary for 2001.

The lists of publications contained in this Summary indicate the areas of scholarship to which CEE’s faculty members contribute. A browse through the lists shows that CEE’s faculty members are very productive and engage extensively in significant scholarly endeavor. Research expenditures for projects developed by CEE faculty totaled $3.6M during this year. The scholarly efforts of faculty are recognized nationally and internationally. In this respect, the Summary also lists recognitions that faculty gained during this year. CEE’s faculty are outgoing bunch, participating in a range of research centers and institutes. About half of CEE’s faculty are affiliated with the Iowa Institute of Hydraulic Research. Almost a third of faculty are affiliated with the Center for Computer Aided Design. One faculty member is a co-Director of the Center for Global and Regional Environmental Research. Two faculty are Associate Directors of centers: the Center for Health Effects of Environmental Contamination, and the Center for Biocatalysis. Two faculty members have affiliations with the Public Policy Center.

Next year promises to be yet a further busy year for CEE; curricular developments have to be completed, student-recruitment plans implemented, and research opportunities pursued.

Robert Ettema  
Department Executive Officer

1 ABET, Accreditation Board for Engineering and Technology

2
BS Degrees Awarded
(Civil Engineering)

Bilskemper, Josiah David
Brooke, Will C
Carhoff, Benjamin A
Cooney, Leia Jane
Ciejewski, Gregory Edward
Gallagher, Jess Thomas
Granquist, Aaron Dennis
Gripp, Angela Renee
Guffey, Aaron Paul
Johll, Brian James
Johnson, Matt Gordon
Kampman, Nathan Gene
Lyons, Troy C
Malcolm, Manuel Jesus
Martin, Terry Gene
Meade, Justin Patrick
Michalisko, Marty James
Nelson, Gabriel A
Nolan, William Patrick
Otto, Eric Linden
Pieniazek, David Lawrence
Raczynski, Craig Thomas
Saele, Thomas H
Santucci, Elizabeth Marie
Spradling, Joseph James
Stevens, Nathan D
Trees, Julie Marie
Williams, Anissa Deanse
Wisniewski, Julie Anc
Wojcik, Jennifer Lea
Environmental Engineering and Science
*Adamson, David Temple
Chen, Zhao
Choi, Junghoon
*Dietz, Annette Churee
Duirk, Stephen
Gregory, Kelvin Bolton
*He, Shan
Just, Craig Lavern
Kamath, Roopa
Laehab, Ahmed
Mezzari, Melissa Paola
Miller, Sondra
Ney, Richard A.
Peck, Aaron M.
Rentz, Jeremy
Shrout, Joshua Duncan
Silva, Marcio Luis Busi
Smith, Sharon
Wethington, David Michael
Williams, Aaron
Yoon, Jong Moon

Hydraulics and Water Resources
Abraham, David Daniel
Chen, Li-Chuan
Chen, Zhiming
Choi, Taehoon
*Daly, Steve
Habib, Emad Hosny
Holman-Dodds, Jennifer Karna
Huang, Heqin
*Huang, Jianchun
Kim, Sung-Chul
Kucera, Paul Anthony
Li, Zhongwei (David)
Morales-Chaves, Yenory
Ouyang, Huei-Tau
Woldswami, Mekonnen G
*Young, Christopher Bryan
Yu, Kwonkyu
Zhang, Liehun
Structures, Mechanics, and Transportation
Chen, Xiaobei
Man, Xiaolin
*Mijar, Anand Ramchandra
Nageswararao, Bhairavavajjula
Obadat, Mohammad
Yin, Haining
Yin, Huiming
Yu, Soon Jae
Environmental Engineering and Science
Alowitz, Michael
Barnes, Kenneth Gerald
*Brown, Shannon Nichole
Budhatheki, Okendra
Christopherson, Jason Ronald
Cross, Carla
Gander, Jerry
Gandhi, Sumeet Dharampal
Keller, Richard Matthew
Lovanth, Nanh
Means, Nathan Alan
Park, Dong-Kyoo
*Ponangi, Sridhar
Schroeder, Laurie
Smith, Gretchen L.
Wojcik, Jennifer Lea

Hydraulics and Water Resources
*Blank, Jeffrey Charles
*DeAndrade, Fernando
Dierking, Paul Brian
Elkhaliifa, Abubaker Bashir
Hashino, Tempei
*Haug, Peter Edmund
*Kubit, Owen Edward
Liu, Lei Ji
Lyons, Troy
Nelson, Brian Richard
*Nielsen, Kevin D.
*Ooi, Seng-Keat
Vant Land, Renee
*Young, Nathan Cline
Zimmerman, R. Scott
Structures, Mechanics, and Transportation
Akbar, Neushad Metharath
Akella, Venkata Ravishankar
Auderer, Cint R.
Bottorff, Douglas James
Bulusu, Sunil Kumar
Driscoll, Jane Louise
Gade, Vijay
Kang, Ki-Hyoung
*Kobal, Christopher Andrew
Kuo, Yi-Wen
*Kyle, Kenley Garland
Nadimpalli, Lalith
Rahmatalla, Salam
*Rasmussen, David Lynn
Romack, Kerry Lyn
*Shawn, Al
Stevens, Nathan
*Stewart, Kristofer John
Sultan, Sultan Abdul-Rassaq
Tricoff, Joanne Elissa
Williams, Anissa Deanne
UI ASCE Student Chapter

The University of Iowa has a very active student section of the American Society of Civil Engineers (ASCE). UI's student chapter of ASCE provides many unique opportunities to the students each year including the Concrete Canoe, Steel Bridge, Leadership Conferences, and opportunities to attend the National Conference. UI’s student chapter also provides community service and social activities including bowling tournaments, golf tournaments, picnics, and faculty-students socials.

The year 2000 was a very active year for the students. The chapter successfully hosted the Midwest Regional Concrete Canoe competition. The steel bridge built a bridge that placed highly in regional competitions, and allowed the steel bridge team to attend the national competition for a 4th consecutive year. The student mentor program within the College of Engineering was also started with the support of ASCE. Four student members were able to attend the National Conference in Seattle, WA, a first for the University of Iowa. The concrete canoe also designed a innovated hull using software utilized at the Iowa Institute of Hydraulic Research.

The 2000 Steel Bridge Team in Grand Forks, ND. This year was the teams 4th consecutive trip to the Nationals.
Team Pictured (Left to Right): Ben Curkoff, Josh Shipp, Lydia Abari, Todd Barrett, Brad Hill, Jim Mitchell, and Jack Burnham

The 2000 Concrete Canoe team at Regional Competitions.
Team Pictured (Left to Right): Adam Stagge, Mike Welch, Kristi Ross, Sarah Hadria, Libby Locke, Colleen Kelly, Nick Beattie, Ben Malina, Michelle Von Arb, and Matt Palmier.
Hosting the 2000 Regional Concrete Canoe at Lake MacBride, Iowa, in April.

ASCE members assisting with "Invent Iowa," a Junior-High science competition.
# CEE Faculty

## Environmental Engineering and Science

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
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<tbody>
<tr>
<td>Pedro Alvarez</td>
<td>Associate Professor</td>
</tr>
<tr>
<td>Keri Hornbuckle</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>*Patrick O'Shaughnessy</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Gene F. Parkin</td>
<td>Professor</td>
</tr>
<tr>
<td>Michelle Scherer</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>Jerald L. Schnoor</td>
<td>Professor</td>
</tr>
<tr>
<td>Richard L. Valentine</td>
<td>Professor</td>
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* Joint with Occupational & Environmental Health

## Hydraulics and Water Resources

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>A. Allen Bradley</td>
<td>Associate Professor</td>
</tr>
<tr>
<td>William E. Eichinger</td>
<td>Associate Professor</td>
</tr>
<tr>
<td>Robert Ettema</td>
<td>Professor &amp; Chair</td>
</tr>
<tr>
<td>Forrest M. Holly</td>
<td>Professor</td>
</tr>
<tr>
<td>Subhash C. Jain</td>
<td>Professor</td>
</tr>
<tr>
<td>Witold F. Krajewski</td>
<td>Professor</td>
</tr>
<tr>
<td>A. Jacob Odgaard</td>
<td>Professor</td>
</tr>
<tr>
<td>Larry J. Weber</td>
<td>Assistant Professor</td>
</tr>
</tbody>
</table>

## Structures and Mechanics and Transportation

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jaibir S. Arora</td>
<td>Professor</td>
</tr>
<tr>
<td>M. Asghar Bhatti</td>
<td>Associate Professor</td>
</tr>
<tr>
<td>*Hosin &quot;David&quot; Lee</td>
<td>Associate Professor</td>
</tr>
<tr>
<td>Wilfrid A. Nixon</td>
<td>Professor</td>
</tr>
<tr>
<td>Lichi Sun</td>
<td>Assistant Professor</td>
</tr>
<tr>
<td>James W. Stoner</td>
<td>Associate Professor</td>
</tr>
<tr>
<td>Colby C. Swan</td>
<td>Associate Professor</td>
</tr>
<tr>
<td>Han-Chiu Wu</td>
<td>Professor</td>
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</tbody>
</table>

* Joint with Public Policy Center
Adjunct

Georgakakos, Konst., Professor, Scripps, La Jolla, CA
Johnson, Kent, Asst. Prof., IIHR
Khattat, Ibrahim AI, Assoc. Prof'
Khetifa, Ali, Asst. Prof, IIHR
Kim, Donguk, Visiting Associate Prof., CEE, INJE University, Korea
Kruger, Anton, Asst. Prof., IIHR
Licht, Lou, Assoc. Prof, Ecolotree
Lloyd, Ken, Asst. Prof, Water Plant
Munte, Marian, Asst. Prof., IIHR
Nakato, Tatsuaki, Professor, IIHR
Nestler, John, Assoc. Prof., U.S. Army Engr.
Ranganathan, R., Assoc. Prof., Ford Motor Co.
Spasojevic, Miodrag, Assoc.Prof., IIHR

Secondary

Carmichael, Greg, Prof., Chemical & Biomedical Engineering
Forkenbrock, David, Prof., Pub Policy Ctr
Marquez, Shannon, Assistant Prof., Occupational and Environmental Health
Patel, V.C., Prof, IIHR / ME
Rajagopal, R., Prof., Geography
Thorne, Peter, Prof., Prev Med
Weirich, Frank, Assoc. Prof., Geology
Zhang, Y.K., Assoc. Prof., Geology

Visiting Faculty

Sizer, Mike, Iowa Western Community College
St. Clair, Martin, Coe College

Postdoc

Gombert, Bertrand
Oh, Byung-Tack

Emeritus

Branson, Dan E., Structures and Mechanics
Kane, Harrison, Structures and Mechanics
McDonald, Donalé, Environmental
Paulson, Wayne L., Environmental

2 Iowa Institute of Hydraulic Research
<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jennifer Bennett</td>
<td>Structural Engineer</td>
<td>Raymond-Beling, Inc.</td>
</tr>
<tr>
<td>Jane Carlson</td>
<td>Senior Engineer</td>
<td>Strand Consultants</td>
</tr>
<tr>
<td>Richard Foss</td>
<td>City Engineer</td>
<td>City of Iowa City</td>
</tr>
<tr>
<td>Phil Larson</td>
<td>Senior Engineer</td>
<td>Shive-Hattery, Inc.</td>
</tr>
<tr>
<td>Fred Locher</td>
<td>Senior Engineer Hydraulics Group</td>
<td>Bechtel Corporation</td>
</tr>
<tr>
<td>Marv Martens</td>
<td>Senior Engineer</td>
<td>Corps of Engineers, Rock Island District</td>
</tr>
<tr>
<td>Ian McAlister</td>
<td>Principal Civil Engineer</td>
<td>Stanley Consultants</td>
</tr>
<tr>
<td>Mark Nahra</td>
<td>County Engineer</td>
<td>Linn County Engineer</td>
</tr>
<tr>
<td>Allan Poole</td>
<td>Director</td>
<td>Department of Public Utilities, City of Naperville</td>
</tr>
<tr>
<td>Henry Priester</td>
<td>Chief Airport Construction Engineer</td>
<td>Division of Aeronautics, Illinois DOT</td>
</tr>
<tr>
<td>Rebecca Svacos</td>
<td>V.P/Industrial Sector Leader</td>
<td>Howard R. Green, Co</td>
</tr>
<tr>
<td>Michael A. Vander Wert</td>
<td>Vice President</td>
<td>Calhoun &amp; Associates</td>
</tr>
<tr>
<td>Larry Frevert</td>
<td>Deputy Director</td>
<td>Public Works Department, City of Kansas City</td>
</tr>
<tr>
<td>Michael Kyte</td>
<td>Director</td>
<td>National Institute for Advanced Transportation Technology</td>
</tr>
</tbody>
</table>
Awards and Recognitions

Jasbir Arora
- Awarded Distinguished Service Certificate, Structural Engineering Institute of the American Society of Civil Engineers

Allen Bradley
- NSF Early Faculty Career Development (CAREER) Award (1997-2001)

William Eichinger
- Collegiate Teaching Award, College of Engineering

Robert Ettema
- Member International Editorial Board, Journal of Korean Civil Engineers, Korean Society of Civil Engineers

Forrest Holly
- reuse Award, American Society of Civil Engineers, Environmental Water Resources Institute

Keri Hornbuckle
- University of Iowa Provost Office International Travel Grant
- University of Iowa's Old Gold Summer Fellowship
- NSF Career Award (1997-2001)
- Appointed to Advisory Board of International Joint Commission

Hosin "David" Lee
- Guest Professor Fellowship, COWI Foundation, Denmark
- Old Gold Fellowship, University of Iowa

Michelle Scherer
- National Science Foundation CAREER Award
- Great Plains/Rocky Mountain Haz. Subst. Research Center Best Poster Award - 3rd Pl.

Jerald Schnoor
- Hancher-Finkbine Medallion, Univ. of Iowa
- Henske Distinguished Lecturer, Yale University
- Feng Distinguished Lecturer, Univ. of Massachusetts

Lizhi Sun
- Old Gold Fellowship, University of Iowa

Richard Valentine
- American Water Works Association Academic Achievement Award (Major Advisor) to Peter Vikesseland for Best Dissertation, "Monochloramine Loss in the Presence of Ferrous Iron: Kinetics, Mechanisms, and Products"
Books


Book and Monograph Chapters


Journal Articles


Conference Papers


Ettena, R., Zabilansky, J., and Bledsoe, B., (July 2000) “Ice-Induced Thalweg Oscillations along the Fort Peck Reach of the Missouri River,” ASCE Water Resources Conference, Minneapolis, MN


Kubist, O. and Ettema, R., (August 2000) "Ice-Skimming Booms for Riverside Diversions," IAHR Symposium on Ice, Gdansk, Poland


Muste, M., Ettema, R., and Fujita, I., (March 2000) "Image-Based Technique for Monitoring Ice Motion in Laboratory and Field Conditions," International Workshop on River Environments Considering Hydraulic and Hydrologic Phenomena in Snowy and Cold Regions, Quebec City, Quebec, Canada


22


O'Shaughnessy P.T, Hemenway D.R. (November 2000) Aerosol photometer response while automatically controlling chamber dilution-air flow rate, 19th Annual Conference of the American Association for Aerosol Research, St. Louis, Missouri, (Abstract No. 11P13)

O'Shaughnessy P.T, Hemenway D.R. (November 2000) Aerosol photometer response while automatically controlling chamber dilution-air flow rate, 19th Annual Conference of the American Association for Aerosol Research, St. Louis, Missouri, (Abstract No. 11P13)


Pearce TE, Thorne TA, O'Shaughnessy PT. (November, 2000) "Laboratory comparison of three commercially-available bioaerosol impinger samplers." 19th Annual Conference of the American Association for Aerosol Research, St. Louis, Missouri, (Abstract No. 9A5)


Spasojevic, M. and Holly, F.M. Jr., (July 2000) "Field Data and 3D Mobile-Bed Modelling: Help or Hindrance?", Proceedings. 4th International Conference on Hydroinformatics, Cedar Rapids, Iowa


24


25
Reports


