

DEPARTMENT OF CIVIL, CONSTRUCTION, AND ENVIRONMENTAL ENGINEERING

North Carolina State University

Annual Report
2005–2006

George F. List , Professor & Head
David W. Johnston , Professor & Associate Head for Graduate Programs
Morton A. Barlaz , Professor & Associate Head for Undergraduate Programs
David W. Parish , Lecturer & Coordinator of Advising

The Department of Civil, Construction, and Environmental Engineering is pleased to publish its 2005-06 annual report which summarizes the hard and dedicated work of its faculty, staff and students. Our commitment continues to integrate strong engineering education and research into all areas of the Department. These efforts are clearly recognized by our continued success in obtaining outside funding which strengthens our traditional engineering programs while allowing us to invest in emerging fields which prepare our students for the workforce of the future. We thank our alumni and friends for their continued generous support which has allowed us to meet many of our challenges.

The following data highlights research and related activities for the current year. Ten-year trends are presented in subsequent sections of this report. Some of the significant observations are as follows:

- Undergraduate enrollment remained stable at 529 matriculated students and 746 total students in Fall 2005. BS degrees awarded in 2005-06 totaled 169 including 111 CE, 46 CEM, and 12 ENE degrees. Scholarship support continues to expand.
- Graduate enrollment increased slightly to a new high of 240 in Fall 2005, maintaining the substantial increase of about 30 to 238 which occurred in Fall 2004. PhD enrollment reached an all time high of 89 post-master's students. Sixty-nine graduate degrees were awarded this year. Graduate enrollment in distance education courses continues to expand with students in 19 states.
- Our externally funded programs continue to prosper as faculty receive national recognition with grants, contracts, and other funding from federal, state, industry and private sources. The creative work of our faculty and students is being recognized by publication in some of the most respected scholarly journals in the profession as well as through leadership roles in professional societies. External funding generated by the faculty totaled **\$18,270,860** in active research, evaluation, and training contracts and grants with expenditures of **\$5,116,656** for the fiscal year 2005-06.

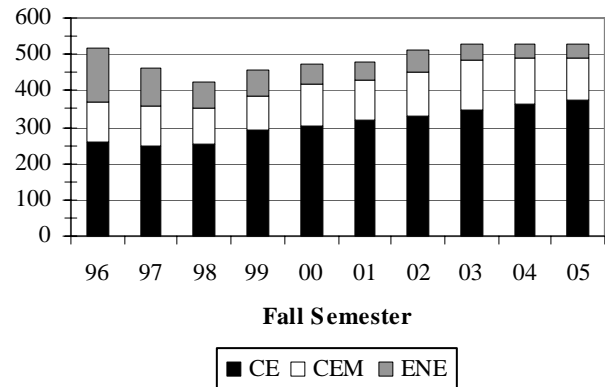
UNDERGRADUATE PROGRAM

Total matriculated enrollment remained stable at **529** in Fall 05 compared to **528** in Fall 04. There were a total of **169** degrees awarded in 2005–06 which was only a slight decrease from the **172** degrees awarded in 2004-05.

Enrollment – 2005-06

Matriculated	F05	S06
Civil Engineering (CE)	375	386
Construction Engineering and Management (CEM)	113	112
Environmental Engineering (ENE)	41	38
	529	536
Undesignated		
Civil (CEU)	168	133
Construction (CMU)	34	35
Environmental (ENU)	15	16
	217	184
Total:	746	720

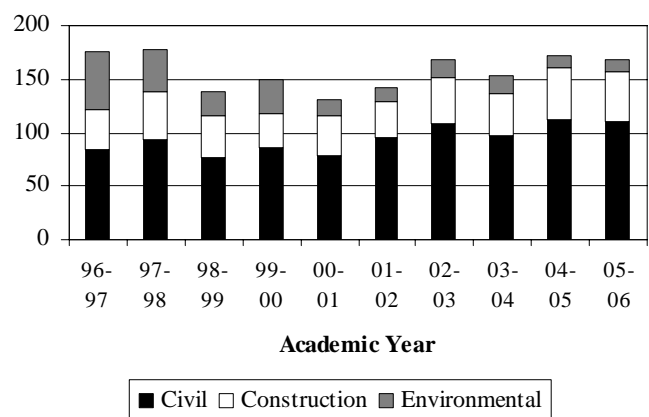
ENROLLMENT TRENDS
Matriculated Undergraduates



Degrees Awarded – 2005-06

Bachelor of Science	
Civil Engineering (CE)	111
Construction Engineering and Management (CEM)	46
Environmental Engineering (ENE)	12
Total:	169

DEGREE TRENDS
Bachelor of Science



Scholarships & Awards

Many undergraduates were awarded scholarship funds during the 2005-06 academic year. A list of the recipients and scholarships follows:

- **Alaa Ali** - *J.C. Brantley*
- **Alaa Ali** – *Thompson*
- **Brandon Ashton** - *Jones Group*
- **Brandon Ashton** - *Jones Group*
- **Christopher Aycok** - *Thompson*
- **Tyler Barker** - *Louis E. Wooten*
- **Rodney Bass** - *Thompson*
- **Carey Blackmar** - *A.C. Kraynik*
- **Colleen Bowker** - *Thompson*
- **Colleen Bowker** - *Whatley*
- **Brandon Bowland** - *Paul Stephens*
- **Cory Bowman** - *K.P. Dixon*
- **Wesley Brown** - *Thompson*
- **Christopher Burgess** - *Thompson*
- **Scott Burwell** - *G.H. Blessis*
- **Justin Clark** - *Steelfab*
- **Justin Clark** - *Thompson*
- **William Clark** - *APWA*
- **Patricia Clayton** - *Futrell*
- **Nicholas Constantine** - *Welch*
- **Charles Cunningham** - *J.C. Brantley*
- **Charles Cunningham** - *Thompson*
- **Jason Deane** - *C.C. Mangum*
- **Charles DeVoto** - *C.F.Eubanks*
- **Charles DeVoto** – *Thompson*
- **Adam Dobbs** – *PCEA Triangle Chapter*
- **Paul Duncan** - *Shelco/Gardner*
- **Philip Gaston** - *Thompson*
- **Hartley Grimes** - *C.K. Little*
- **Hartley Grimes** - *Thompson*
- **Ernest Hahn** - *R.E. Smith*
- **Ernest Hahn** - *Thompson*
- **Matthew Haley** - *Mulkey/Shelton*
- **Matthew Haley** - *Phoenix*
- **Nathanial Harvey** - *E.I.Clancy*
- **Nathanial Harvey** - *J.T. Moore*
- **Nathanial Harvey** - *Thompson*
- **David Heath** - *J.C. Brantley*
- **Daniel Heath** - *Thompson*
- **Daniel Heath** - *VCSSFA*
- **Aaron Heustess** - *Thompson*
- **Michael Hinsley** - *C.C. Mangum*
- **Michael Hinsley** – *CFMA Triangle Chapter*
- **Michael Hinsley** – *PCEA Triangle Chapter*
- **James Huggins** - *BD Rodgers*
- **Robert Jarzemsky** - *Welch*
- **David Joyner** – *Thompson*
- **Joshua Kallam** - *G.H. Blessis*
- **Joshua Kallam** - *G.H. Blessis*
- **Andrew Knupp** - *R.A. Bryan*
- **Andrew Krebs** - *C.R. Bramer*
- **Matthew Lamy** – *N & S Samet*
- **Matthew Lamy** – *C.T. Wilson*
- **Alexander Lanka** – *Sullivan*
- **Kyle Levitt** - *Thompson*
- **Angela Lewis** - *Thompson*
- **Nicholas Lutzweiler** - *Brad Hatcher*
- **Nicholas Lutzweiler** - *Thompson*
- **Matthew Lytle** - *Thompson*
- **Kaitlin Marley** - *Jones Group*
- **Michael Martin** - *E.I. Clancy*
- **Micah McCool** - *Thompson*
- **Daniel McGlamery** - *Thompson*
- **Douglas McLain** - *Thompson*
- **Kevin Miller** - *R.A. Bryan*
- **Jessica Moebs** - *Thompson*
- **Robert Mozeley** - *Thompson*
- **Evan Musselwhite** - *Eskridge & Long*
- **Omojojada Ogbon** - *Thompson*
- **Joshua Outlaw** - *J.D. Goins*
- **Joshua Outlaw** - *Jones Group*
- **Robert Parker** - *Louis E. Wooten*
- **Robert Parker** - *Thompson*
- **Crystal Penton** - *Thompson*
- **Patrick Phillips** - *Eskridge & Long*
- **Michael Plaisted** - *H. Bremer*
- **Lois Poore** - *Browning*
- **William Price** - *Paul Stephens*
- **Justin Ramsey** - *AGC Foundation*
- **Kyle Ramsey** - *Curlee*
- **Russell Rocket** - *AGC Foundation*
- **Justin Rowell** - *Welch*
- **Justin Rowell** - *Carolina Tractor*
- **Christopher Schoonover** - *Thompson*
- **Robert Secrist** – *Thompson*
- **Clayton Simmons** – *PCEA Triangle Chapter*
- **Scott Simmons** - *E.I.Clancy*
- **Adam Simpson** – *J & B Covington*
- **Laura Smith** - *K.P. Dixon*
- **Ashley Steele** - *G. Mullen*
- **Ashley Steele** - *Thompson*
- **Justin Story** - *Welch*
- **Elliott Taylor** - *Jones Group*
- **Matthew Tom** - *Thompson*
- **Hillary Upton** - *Thompson*
- **Ryan Vargochik** - *C.C. Mangum*
- **Ryan Vargochik** - *Shelco*
- **Francesco Viola** - *Sepelak*

- **Francesco Viola** - *Thompson*
- **David Wall** – *Thompson*
- **Jonah Warren** – *PCEA Triangle Chapter*
- **Mary Williams** - *R.E. Smith*
- **Jeffrey Wilson** - *R.A. Bryan*
- **Clayton Woodward** - *Thompson*
- **David Wyatt** - *Shelco/Rose*

The following awards were received by the students as indicated:

- AGC Outstanding Senior in Construction Engineering and Management Award – **Jonah Warren**
- Stephen Safran Outstanding Construction Estimator Award, Fall 2005 – **Jeremiah Smith**
- Stephen Safran Outstanding Construction Estimator Award, Spring 2006 – **Clayton Simmons**

Student Organizations

Alfred P. Norwood Chapter of Chi Epsilon Chapter Report

The North Carolina State University Chapter of Chi Epsilon, endowed by the first chapter president **Alfred P. Norwood** and advised by **Dr. James M. Nau**, has much to celebrate as this year comes to an end. In addition to welcoming 25 new members this year, the chapter aided in the Hurricane Katrina relief efforts. During the month of September, school supplies valued at over \$2000 were collected and sent to children affected by Hurricane Katrina. Customers at the Staples at Brier Creek Commons in Raleigh, NC donated approximately half of these supplies. The remainder came from Phillip R. Jones Inc., others in the Raleigh residential building industry, and the Jones family of north Raleigh. The school supplies were organized, packed, and given to Dr. Ramey Beavers of the Wake County school system. He transported the supplies to Pascagoula, Mississippi and distributed them to local school children.

During the 2005-06 academic year, the following members served as chapter officers: **Amanda Powers**, President; **Hartley Grimes**, Vice-president; **Beth Visintine**, Secretary; Caleb Pike, Treasurer; Elijah Smith, Pledge Marshal; and **Catrina Walter**, Associate Editor.

On December 4, 2005, the following students were initiated into the Alfred P. Norwood Chapter: **Charles Aydlett, Joseph Barbee, Ernest Hahn, Matthew Haley, Pavan Immaneni, Jordan Isenhour, Eleni Iverson, John Kells, Michael Leggett, Michael Lewis, Michael Martin, Justin Rowell, Jeremiah Smith, and Meade Willis.**

The initiation held April 23, 2006 welcomed the following students into membership: **Carolina Brady, Patricia Clayton, Wesley Corder, Charles DeVoto, David Leonard, Jessica McClure, Michael McKenzie, Robert Parker, Matthew Peterson, Kevin Ryan, and Elizabeth Waller.** Following the initiation ceremony, new chapter officers were installed for the 2006-07 academic year: **Charles DeVoto**, President; **Hartley Grimes**, Vice-president; **Patricia Clayton**, Secretary; **Jessica McClure**, Treasurer; **Ernest Hahn**, Pledge Marshal; and **Matthew Haley**, Associate Editor.

AGC and NAHB Chapter Activities

Recognizing an endowment for the AGC Student Chapter established by **Charles T. Wilson, Jr.**, the Chapter was named the C.T. Wilson Construction Student Chapter of the Associated General Contractors of America at a recognition ceremony on February 1, 2006. Three generations of the Wilson family have been graduates of our department. The endowment proceeds will be used, among other things, to enhance the student chapter activities and provide funding for CEM students to participate in Carolinas AGC and AGC of America activities.

The NC State student chapters of the Associated General Contractors (AGC) and the National Association of Home Builders (NAHB) worked together this year to host several chapter lunches with invited speakers from the following companies: **The Berger Group, Scott Cooper Builder, Perry Builders, Kimley-Horn, Ashland Construction, BovisLendLease, Mark Massengill Builder, HNTB, Turner Construction, Palladium Homes, PB Constructors, John R. McAdams Company, Forensic Engineering, and Brasfield and Gorrie.**

The AGC student leaders, **Ben Burgess**, **Justin Ramsey**, and **Derek Kristeller** also attended the AGC national convention in Palm Springs, CA in March with chapter advisor **Ed Weaver** and **Dr. David Johnston**, where they participated in events and manned a display on the NC State's AGC Chapter, CEM program, and distant education Master's degree.

The NAHB students were busy this year assisting professionals and promoting NC State at the Ideal Home Show at the NC State Fairgrounds as well as marketing sign-up for FE Exam, one of its fund-raisers.

ASCE Chapter Activities

Over the past school year, NC State's ASCE Chapter has greatly increased its presence on campus, and student membership has been as high as it has in a while. Our goals for this school year were to become more active in community service projects, increase underclassmen membership, and continue our success in Regional and National competitions.

Among some of the activities ASCE members participated in included the NC State's Shack-A-Thon which challenges student groups to build a shack out of wood and recycled materials and live in it for a week within a village of shacks located in NC State's brickyard. Someone is required to stay in the shack at all times, day and night and collect donations from teachers and students. With assistance from AIChE and TAPPI, the chapter raised over \$200 for Habitat for Humanity from the Shack-A-Thon. Other activities over the past school year include ASCE's participation in Habitat's *ReStore* program and also a fundraiser in which proceeds were donated to the Red Cross for the earthquake victims of South Asia.

During the month of April, NC State competed in the annual Carolinas Conference which was held this year in Charleston, SC. North Carolina State University finished second overall, the highest we have placed in over a decade. The two most notable events include the National Concrete Canoe Competition and the National Student Steel Bridge Competition. Our Concrete Canoe placed second, and once again qualified for nationals which will be held during this summer at Oklahoma State University. Other competitions that NC State placed in included a first place in the Environmental Design Competition, second place in the Knobmore Challenge, and second place in the Student Mead paper.

Based on our 2005 Annual Report, the National ASCE Chapter awarded the NC State chapter with a "Letter of Significant Achievement." It's been a great year for NC State's ASCE Student Chapter, and we look forward to continuing our success and getting civil engineering students involved within the community and within our own CCEE Department.

A&WMA Student Chapter Report

The student chapter of A&WMA at NC State continues to play an active role in serving the student body on campus with their academic interests. Activities hosted by the student chapter included academic seminars, field tour, poster contest, participation of the A&WMA annual meeting, and others. The following is a summary of the main activities that student chapter organized for the year 2005-06.

The student chapter had 28 members for the year and was run by the following four officers and one chapter advisor: **Kaishan Zhang**, President, **Ping Liu**, Vice-President, **Hellen Taylor**, Secretary, **Kangwook Kim**, Treasurer; **Dr. H. Christopher Frey**, Faculty Advisor.

The chapter officers had meetings on a regular basis discussing issues related to the activities of this chapter. These included selection of topics for the seminars, candidates for speakers, field trips, fundraising and logistical support for the seminar and field trips. The chapter also maintained a website to introduce the chapter to the public, and publicize important announcements such as seminars and scholarship opportunities. For the students at NCSU, the website also introduces available courses related to air and waste management on campus. The website for the student chapter is http://www.ncsu.edu/stud_orgs/awma/index.html. In addition, the chapter also

set up a mailing list to announce any coming activities, including the seminars and conferences locally and nationally. Particularly, many student members participate in the seminars of the A&WMA RTP chapter.

The following seminars were hosted for the year 2005-06. The topics covered risk analysis, air quality, solid waste, environmental statistics, and environmental policy. Experts in these fields were selected and invited as speakers for these topics. Flyers of these seminars were prepared and publicized campus-wide before the talk. An announcement was also made on the chapter's website.

- **Dr. Chris Hofelt**, Assistant Professor from Department of Environmental and Molecular Toxicology, NC State University, "Toxicology and Environmental Risk Assessment: The Dose Makes the Poison"
- **Dr. Yang Zhang**, Assistant Professor, Department of Marine, Earth and Atmospheric Sciences, NC State University, "Air Quality Modeling: History, Current Status and Future Opportunities"
- **Dr. John Classen**, Associated Professor, Department of Agricultural and Biological Engineering, NC State University, "Animal Production and Waste Management"
- **Dr. Sujit Ghosh**, Associated Professor, Department of Statistics, NC State University, "Bayesian Methods in Environmental Sciences: A Brief Introduction"
- **Dr. Donald van der Vaart**, North Carolina Department of Environment and Natural Resources "The Current State of Air Quality Regulation and Engineering"

In order for the members to have a better understanding of the energy related research at NCSU, a field trip was arranged to visit the North Carolina Solar Center on November 19, 2005. The Solar Center was created in 1988 to serve as a clearinghouse for solar and other renewable energy programs, information, research, technical assistance, and training for the citizens of North Carolina and beyond. The Solar Center is sponsored by the N.C. Department of Administration's State Energy Office, the U.S. Department of Energy, and the North Carolina Solar Center Foundation, and is operated in conjunction by the Department of Mechanical & Aerospace Engineering and the Industrial Extension Service at North Carolina State University. For more details regarding the solar center, please visit the website at <http://www.ncsc.ncsu.edu/default.cfm>. The pictures taken during the trip are posted on the student chapter website at http://www.ncsu.edu/stud_orgs/awma/SolarHouseTour.htm.

The Department of Civil, Construction, and Environmental Engineering at NC State University hosts a symposium each spring for water resource and environmental engineering (WREE) students, namely WREE Spring Symposium. The symposium features research posters by students in the WREE program. The symposium also invited judges outside the university, such as A&WMA RTP chapter, EPA, and some local consulting firms to select the best poster. The student chapter members have been active in participation of this event. For this year, more than 10 student members attended in the spring symposium.

With the financial support from the A&WMA RTP chapter, each year the student chapter encourages student members to attend the A&WMA annual meeting to present their research and interact with students from other universities. Five student members attended the annual meeting in New Orleans, LA in June--two gave a presentation in the regular technical session, and two participated in the student program. This year, **Ping Liu**, an NC State PhD candidate in Atmospheric Science and the Vice-president of the student chapter, won the A&WMA Scholarship for the year 2007-07. Ms. Liu received the scholarship at the annual meeting in New Orleans, LA in June.

GRADUATE PROGRAM

Enrollment and Degrees

The Department offers the Master of Civil Engineering (MCE), Master of Science (MS), and Doctor of Philosophy (PhD) degrees in all specialty areas of Civil Engineering. Total enrollment in Fall 2005 increased very slightly to **240** from **238** in Fall 2004. There were **69** graduate degrees awarded. The Distance Education Track of the MCE degree continues to see expanded enrollment. In Spring 2006, 41 MCE distance students were enrolled. In 2005-2006, there were over 200 individual student enrollments in distance classes with students from 19 states (degree seeking and non-degree seeking). In the last two years, the first 11 distance students graduated.

Enrollment by Degree		
	F05	S06
Masters (MCE/MS)	151	149
Doctoral (PhD)	89	92
Total:	240	241

Enrollment by Area		
	F05	S06
Computer-Aided Engineering	11	9
Construction	33	36
Geotechnical	20	17
Structures & Mechanics	72	65
Trans. Systems & Materials	42	50
Water Resources & Env. Eng.	62	64
Total	240	241

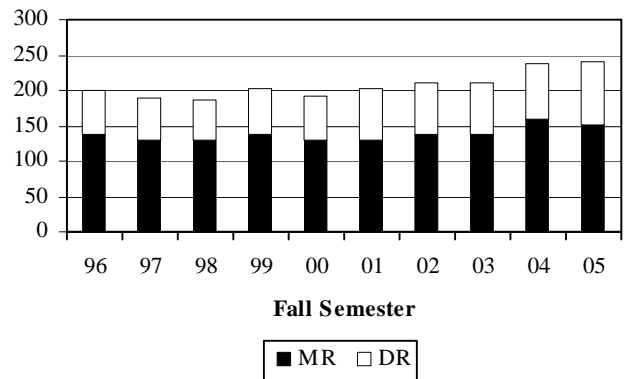
Sources of Support		
	F05	S06
Teaching Assistants (TAs)	39	36
Research Assistants (RAs)	80	85
Dean's Fellows*	9	6
Other Fellows & Scholarships*	12	12

*Some Fellows are also TAs or RAs.

Degrees Awarded – 2005-06		
	F05	S06
Professional		0
Masters (Total)		56
MCE	32	
MS (thesis required)	24	
Doctoral (PhD)		13
Total:		69

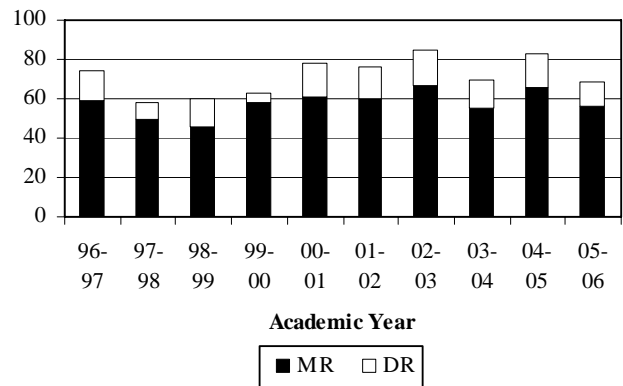
Includes Sum05, F05, and S06 degrees

ENROLLMENT TRENDS
Graduate



Note: MR represents combined MS and MCE enrollment statistics.

DEGREE TRENDS
Graduate



Fellowships and Awards

College of Engineering Dean's Fellowships were awarded to the following new Civil Engineering graduate students in 2005-2006:

- **Zachary Clark**
- **Alixendra Demers**
- **Daniel Findley**
- **Andrew Lacroix**
- **Matthew Sumpter**
- **Jarod Brice Wheeler**

The Following Civil Engineering graduate students received Fellowships from the Southeastern Transportation Consortium:

- **Jongdae Baek**
- **Chun Chen**
- **Zachary Clark**
- **Jin Ki Eom**
- **Daniel Findley**
- **Yang Han**
- **John Horner**
- **Jae-Joon Lee**
- **Jisun Lee**
- **Sangyum Lee**
- **Jae-Pil Moon**

Special recognition goes to the holders of these prestigious fellowship awards:

- **Bryan Staley** – *The Governor and Mrs. Dan K. Moore Fellowship to Keep North Carolina Clean and Beautiful*
- **Bryan Staley** - *Air & Waste Management Association Fellowship*
- **Zachary Clark** - *Transportation Founders Fund Fellowship*
- **Daniel Findley** - *Transportation Founders Fund Fellowship*
- **Bart Grasso** - *Emol Falls Graduate Fellowship in Construction*
- **Benjamin Underwood** - *Eisenhower Fellowship - U.S. Dept. of Transportation*
- **Benjamin Underwood** - *Kimley Horn/Ed Vick Scholarship*
- **Dennis Rorie** - *Sean McGrath Memorial Fellowship*
- **Gretchen Lear** - *National Science Foundation Graduate Research Fellowship*
- **Michael Cropper** - *National Science Foundation Graduate Research Fellowship*
- **Elizabeth Harris** - *National Science Foundation Graduate Research Fellowship*
- **Ana Baeza-Freer** - *National Science Foundation Graduate Research Fellowship*

FACULTY

New Faculty Appointments

- **Dr. George F. List** was named Department Head effective July 1, 2005. **List** comes to NC State from Rensselaer Polytechnic Institute in Troy, NY where he served as Chairman of the Department of Civil Engineering. He was also Director of the Center for Infrastructure and Transportation Studies and Professor in the Department of Decision Sciences and Engineering Systems. His professional experience includes work in the private sector as a senior transportation engineer with Transportation and Distribution Associates in Philadelphia, PA and in the military as an instructor and department head at the Nuclear Power School in Bainbridge, MD. He received his Ph.D. in Civil Engineering from the University of Pennsylvania in 1984 and is a specialist in instrumentation and control for large-scale networks. He was the recipient of the ITS-NY 2003 Project of the Year Award, the US Department of Energy 1999 Defense Programs Award of Excellence and Rensselaer's Darrin Counseling Award. List is a member of the Transportation Research Board, the Institute for Operations Research and Management Sciences, the American Society of Civil Engineers, the Institute of Transportation Engineers, and the Institute for Electrical and Electronic Engineers.
- **Dr. Sankar Arumugam** joined the Department as Assistant Professor in August 2005. **Arumugam** comes to NC State from Columbia University's International Research Institute for Climate Prediction. He received his Ph.D. in water resources engineering from Tufts University and Master's in water resources and environmental engineering from Indian Institute of Technology Madras. He has also worked as a consultant for World Bank in Washington DC on the effectiveness of environmental impact assessment in South Asia. He is the recipient of the Department of Irrigation Medal for the best paper award by the Indian Union Ministry of Water Resources. His primary research interest is in modeling and forecasting hydrological fluxes at large spatial scales based on land surface and climatic indices. He is also interested in water resource planning and analysis, integrated water management and environmental assessment in developing countries. He received his Ph.D. in water resources engineering from Tufts University and Masters in water resources and environmental engineering from Indian Institute of Technology Madras.
- **Dr. Matt Evans** joined the Department in January 2006 after completing his Ph.D. at the Georgia Institute of Technology. While a graduate student at Georgia Tech, he was awarded the Institute's President's Fellowship, an NSF Graduate Research Fellowship, and the 2006 George F. Sowers Distinguished Graduate Student Award. His research focuses on experimental and numerical micromechanics of granular soils, unsaturated soil mechanics, and interfaces in geotechnical engineering. Prior to attending graduate school, he spent three years as a senior staff engineer at GeoSyntec Consultants in Huntington Beach, CA. He received a BA in physics from the University of Virginia, a BSCE from the University of New Mexico, and his MSCE and Ph.D. degrees from the Georgia Institute of Technology.

Promotions

- **Dr. Margery Overton** was promoted to Professor effective August 16, 2005. **Overton** joined the department in 1982 as an Assistant Professor after receiving her Ph.D. from Duke University where she also earned her BS and MS degrees in civil engineering. She was promoted to Associate Professor in 1988. Since joining the department, she has focused her teaching and research in the area of coastal engineering with specific emphasis on the relationships between storms and beaches. She is the co-Director of the NC State University Natural Hazards Mapping Program. Her research on the application of the use of digital aerial photography for coastal hazard identification has received national recognition and has led to the development of new widely used techniques for quantifying shoreline processes. She serves as an advisor to the North Carolina Division of Coastal Management and the North Carolina Department of Transportation

Faculty Honors & Awards

- **Dr. Leonhard E. Bernold**, Associate Professor, received a Fulbright Senior Specialists grant to conduct research at the University College in Dublin, Ireland during the 2006-07 academic year. Bernold will work with the faculty to develop innovative educational tools.
- **Dr. Paul D. Cribbins**, Professor Emeritus, was inducted last November into the *NC Transportation Hall of Fame*. Cribbins was one of seven people selected for the honor.
- **Dr. Joel Ducoste**, Associate Professor received a Fulbright Research Scholar award to conduct research at Ghent University in Belgium during the 2006-07 academic year. He will work with researchers at the Department for Applied Mathematics, Biometrics and Process Control to develop and evaluate numerical models of the internal bioreactor environment to better understand how that environment influences the dynamic behavior of microorganisms and their metabolic pathways.
- **Dr. H. Christopher Frey**, Professor, served as president-elect of the Society for Risk Analysis for 2005. This international multidisciplinary scholarly society provides an open forum for researchers in the area of risk analysis including risk assessment, characterization, communication, management and policymaking.
- **Dr. H. Christopher Frey**, Professor, was invited as a U.S. delegation member and lead author to the Intergovernmental Panel on Climate Change international meeting and activity on revising greenhouse gas emissions guidance.
- **Dr. Mohammed Gabr**, Professor received a *Certificate of Appreciation* by the Geo-Institute of the American Society of Civil Engineers for his service on its editorial board for the past nine years.
- **Drs. Joseph Hummer, Nagui Roupail and Jae-Joon Lee** received the 2005 *Outstanding Paper Award* from the Transportation Research Board Operational Effects of Geometrics Committee.
- **Dr. James M. Nau**, Professor, received the 2006 George K. Wadlin Distinguished Service Award from the American Society for Engineering Education (ASEE). The award was presented at the 2006 ASEE Annual Conference held in Chicago, IL. The award recognizes distinguished service to the Civil Engineering Division of the ASEE. Recipients are honored for their support of the activities and their contributions to civil engineering education. A member of the ASEE since 1984, Nau has served as member and chair of numerous committees and was chair of the Civil Engineering Division from 1999 to 2000.
- **Mr. Roberto Nunez**, Lecturer and Senior Construction Extension Specialist was inducted into the NC State University's *Academy of Outstanding Faculty Engaged in Extension*. Created in 2000, the academy recognizes faculty members who demonstrate excellence in their outreach efforts to communities external to NCSU. Mr. Nunez was also given an *Outstanding Extension Service Award* by the College of Engineering.
- **Dr. Sami Rizkalla**, Distinguished Professor of Civil, Construction and Environmental Engineering and Director of the Constructed Facilities Lab (CFL) received the *Delmar L. Bloem Award for Distinguished Service* by the American Concrete Institute (ACI). He received the award in recognition of his leadership of the ACI technical committee on fiber-reinforced polymers.
- **Dr. Paul Zia**, Distinguished University Professor Emeritus was appointed by Governor Easley to serve on the North Carolina State Licensing Board for General Contractors. The appointment will continue through December 31, 2010.

Courses Taught

Course No.	Course Title	Instructor	
		Fall 2005	Spring 2006
CE 201	Civil Engineering Measurements and Surveys	Rasdorf	Letchworth
CE 203	Global Positioning and Geographical Information Systems Applications	Hummer/ Rasdorf	
CE 213	Introduction to Mechanics	Chao	AK Gupta
CE 214	Engineering Mechanics-Statics	Nau, Parish, Tayebali	Parish, Cropper, AK Gupta
CE 215	Engineering Mechanics-Dynamics	AK Gupta, Chao	Chao
CE 261	Construction Engineering Systems		Nunez
CE 305	Traffic Engineering	Stone	Williams
CE 313	Mechanics of Solids	Guddati, Rahman	Tayebali, Hassan
CE 324	Structural Behavior Measurement	Matzen	AB Gupta
CE 325	Structural Analysis I	Matzen	Matzen
CE 327	Reinforced Concrete Design	Rizkalla	Rizkalla, Wilkins
CE 332	Materials of Construction	Kim, Tayebali	Khosla
CE 342	Engineering Behavior of Soils and Foundations	Gabr, Kunberger	Parish, Evans
CE 373	Fundamentals of Environmental Engineering	Ducoste	Knappe
CE 374	Environmental Engineering Lab	Bartelt-Hunt	
CE 375	Civil Engineering Systems	Ranjithan	Baugh
CE 381	Hydraulics Systems Measurements Lab	Ranjithan	Ranjithan
CE 382	Hydraulics	Kumar, Overton	Ducoste, Cardona
CE 383	Hydrology and Urban Water Systems	RC Borden, Zechman	RC Borden, Zechman
CE 400	Transportation Engineering Project	Stone	Stone
CE 413	Principles of Pavement Design	Khosla	
CE 420	Structural Engineering Project	Kowalsky	Nau
CE 425	Structural Analysis II	Matzen	
CE 426	Structural Steel Design	Sumner	Sumner
CE 435	Engineering Geology	Gabr	
CE 440	Geotechnical Engineering Project	RH Borden	
CE 443	Seepage, Earth Embankments and Retaining Structures		Gabr
CE 463	Construction Estimating, Planning and Control	Nunez	
CE 464	Legal Aspects of Contracting	Weaver	
CE 465	Construction Equipment and Methods		Leming
CE 466	Building Construction Engineering	Johnston	
CE 469	Construction Engineering Project	Leming	Weaver
CE 476	Air Pollution Control	Frey	
CE 477	Principles of Solid Waste Engineering		Barlaz
CE 479	Air Quality		Frey
CE 480	Water Resources Engineering Project	RC Borden	Acquesta
CE 481	Environmental Engineering Project	RC Borden	Acquesta
CE 484	Water Supply and Waste Water Systems		de Los Reyes
CE 487	Introduction to Coastal and Ocean Engineering		Overton
CE 488	Water Resources Engineering	Ranjithan	

Courses Taught (Cont'd)

Course No.	Course Title	Instructor	
		Fall 2005	Spring 2006
CE 501*	Transportation Systems Engineering	Stone	
CE 502	Traffic Operations	Williams	
CE 503	Highway Design		Hummer
CE 522	Theory and Design of Prestressed Concrete	Rizkalla	
CE 523*	Theory and Behavior of Steel Structures	Sumner	
CE 525	Structural Analysis II	Matzen	
CE 528	Structural Design in Wood		Nau
CE 537	Computer Methods and Applications	Baugh	
CE 538	Information Technology and Modeling		Rasdorf
CE 548	Engineering Properties of Soils I	RH Borden	
CE 549	Soil and Site Improvement		RH Borden
CE 564*	Legal Aspects of Contracting	Weaver	
CE 567*	Risk and Financial Management in Construction	Nunez	
CE 571*	Physical Principles of Environmental Engineering		Ducoste
CE 573	Biological Principles of Environmental Engineering	de Los Reyes	
CE 574*	Chemical Principles of Environmental Engineering	Barlaz	
CE 576*	Engineering Principles of Air Pollution Control	Frey	
CE 577	Engineering Principles of Solid Waste Management		Barlaz
CE 579*	Principles of Air Quality Engineering		Frey
CE 583	Engineering Aspects of Coastal Processes		Overton
CE 584	Hydraulics of Ground Water	RC Borden	
CE 588*	Water Resources Engineering	Ranjithan	
CE 591I	Special Topics - Numerical Computing		Kumar
CE 596B	Special Topics - Environmental Engineering Laboratory	Bartelt-Hunt	
CE 603	Construction Engineering Seminar	Johnston	Leming
CE 605	Structures and Mechanics Seminar	Guddati	Hassan
CE 607	Water Resources and Environmental Engrg. Seminar	de Los Reyes	de Los Reyes
CE 702	Traffic Flow Theory	Rouphail	
CE 706	Advanced Traffic Control		Williams
CE 707	Transportation Policy and Funding		Hummer
CE 714	Stress Waves	Guddati	
CE 715*	Advanced Strength of Materials	Hassan	
CE 717	Theory of Plates and Shells		AK Gupta
CE 720	Matrix and Finite Element Structural Analysis I		Guddati
CE 722*	Structural Dynamics		AB Gupta
CE 724	Probabilistic Methods of Structural Engineering	AB Gupta	
CE 725	Earthquake Structural Engineering	Kowalsky	
CE 726	Advanced Theory of Concrete Structures		Kowalsky
CE 742*	Advanced Soil Mechanics	Rahman	
CE 747*	Geosynthetics in Geotechnical Engineering		Gabr
CE 751*	Theory of Concrete Mixtures		Leming
CE 753	Asphalt and Bituminous Materials	Khosla	
CE 755*	Highway Pavement Design	Kim	
CE 759	Inelastic Behavior of Construction Materials		Kim

Courses Taught (Cont'd)

Course No.	Course Title	Instructor	
		Fall 2005	Spring 2006
CE 763	Materials Management In Construction		Rasdorf
CE 766*	Building Construction Systems		Johnston
CE 771*	Physical-Chemical Water Treatment Processes		Knappe
CE 774	Environmental Bioprocess Technology		de Los Reyes
CE 775	Modeling and Analysis of Environmental Systems	Overton/Brill	
CE 791B	Adv. Topics - High Performance Computing		Kumar
CE 793N	Adv. Topics - Mod. and Comp. Geomechanics		Rahman
CE 795A	Adv. Topics - Multi-Modal Transportation Engineering Studies	Hummer	
CE 796A	Adv. Topics - Stochastic Methods in Water and Environmental Engineering		Arumugam
CE 803	Advanced Construction Engineering Seminar	Johnston	Leming
CE 805	Advanced Structures and Mechanics Seminar	Guddati	
CE 807	Advanced Water Resource and Environmental Engineering Seminar		de Los Reyes

*Also offered by distance education.

Summary of Professional Activities

In 2005–06, members of the Civil, Construction, and Environmental Engineering faculty published or had accepted **208** refereed journal and conference papers. A reference list of faculty publications and reports can be accessed at the Department web site (<http://www.ce.ncsu.edu/reports/>).

In addition to producing publications, faculty members presented **106** invited lectures and other presentations. Most are active members of professional societies, and **28** served on **102** technical committees. More statistics follow.

Number of tenure-track faculty members	36
Number of faculty members chairing at least one graduate committee	35
Number of faculty members participating in peer review of journal papers or research proposals	27
Number of faculty members serving as journal editors or members of editorial boards	13
Publications	
Refereed journal/conference papers published (including “in press” or “accepted for publication”)	208
Non-refereed scholarly publications	74
Books or book chapters	1
Publications submitted or in preparation	62
Invited Lectures	
International	2
United States	26
Other scholarly presentations	78
National and International Technical Committee Service	
Number of faculty members serving on at least one technical committee	28
Total number of committees on which faculty members serve	102

Seminars/Symposiums

American Concrete Institute Honors Zia

A full-day special symposium and dinner was hosted by The American Concrete Institute (ACI) on March 27, 2006 to honor **Dr. Paul Zia**, Distinguished University Professor Emeritus of Civil Engineering at NC State University, for his lifetime achievements. The symposium was part of the ACI Spring Convention, “Bridging the Carolinas — Fast Track Innovations,” held at the Charlotte Convention Center, March 26-20, 2006.

Speakers honoring Professor Zia included:

- **Dr. Larry Monteith**, Chancellor Emeritus, *North Carolina State University*
- **Dr. George List**, Department Head, Department of Civil Construction, and Environmental Engineering, *North Carolina State University*
- **Mr. Ben Hughes**, Executive Director of Development and College Relations, *NC State University*
- **Mr. James Cagley**, President, ACI
- **Mr. Bill Tolley**, Executive Vice President, ACI
- **Dr. James Jirsa**, Past President, ACI and Janet S. Cockrell Centennial Chair in Engineering, University of Texas, Austin
- **Mr. Bob Mast**, Past President of ACI and Senior Principal at BERGER/ABAM Engineers, Inc.
- **Dr. John Schemmel**, Director of Product Development, eTEC
- **Dr. David Darwin**, Deane E. Ackers Distinguished Professor, Department of Civil, Environmental & Architectural Engineering, University of Kansas
- **Dr. Sami Rizkalla**, Distinguished Professor of Civil Engineering and Construction & Director of the Constructed Facilities Laboratory, *North Carolina State University*
- **Mr. Roberto Nunez**, Lecturer and Senior Extension Specialist
North Carolina State University
- **Mr. Cecil Jones**, State Materials Engineer, *North Carolina Department of Transportation*
- **Dr. David W. Johnston**, Professor and Associate Department Head for Graduate Programs, *North Carolina State University*

Zia is a member of the National Academy of Engineering and a former head of the Department of Civil, Construction, and Environmental Engineering at NC State. He is recognized as one of the world’s foremost authorities on concrete structure engineering.

Zia has received over 30 honors and awards during his 50 years of working with concrete, including the Lamme Medal from the American Society for Engineering Education, the Alexander Quarles Holladay Medal for Excellence and the Alcoa Foundation Distinguished Engineering Research Award. He joined the NCSU faculty in 1961 and served as President of ACI in 1989. He received his Ph.D. in civil engineering from the University of Florida in 1960.

WREE Spring Symposium

The Department of Civil, Construction, and Environmental Engineering hosted its annual spring symposium for water resource and environmental engineering (WREE) students. Student chapter members actively participate in this event, and this year more than 10 student members attended in the spring symposium which also included a buffet lunch ribbon cutting and tour of the new CCEE Environmental Laboratory.

A highlight of the symposium was the 2006 KAPPE Lecture by distinguished speaker **N.C. Vasuki** entitled “Solid Waste Processing and Disposal: Another Frontier in Environmental Management.” **Vasuki** is Chief Executive Officer of Delaware Solid Waste Authority. In addition, the symposium featured research posters by students in the WREE program. Judges from outside the university, such as A&WMA RTP chapter, EPA, and some local consulting firms were invited to select the best poster. Student winners were **Isabella Anna Mezzari** (1st place), **Jason Tillotson** (2nd place), and **Cesar Mota** (3rd place).

WREE Spring 2006 Seminar Schedule

Date	Speaker	Title
1/23/06	Dr. Detlef Knappe (CCEE, NCSU)	Drinking Water Quality and Treatment: A Swiss Perspective
2/6/06	Dr. Heileen Hsu-Kim (CEE, Duke)	Assessing Aqueous Sulfide Speciation At Deep-Sea Hydrothermal Vents Using an In-Situ Voltammetric Microelectrode
2/20/06	Cesar Mota (CCEE, NC State U.)	Microbial Ecology of Intermittently Aerated Reactors Treating Swine Wastewater
2/27/06	Dr. Greg Jennings (BAE, NC State U.)	Stream Restoration in North Carolina
3/20/06	Mr. Jeff Shelden (Moffet and Nichol)	Restoration Efforts in Louisiana
3/27/06	Dr. Fran DiGiano (UNC-CH)	Water Quality Distribution Systems and Futuristic Solutions
4/3/06	Haluk Ozkaynak, National Exposure Research Laboratory (NERL), US EPA	
4/17/06	Dr. Tim Kramer (Texas A&M)	Elimination of Oxy-Anions Using Zero Valent Titanium Or When Strange Things Happen in The Lab It Might Be Wise To Pay Close Attention

STAFF NEWS

New Hires

- **Jeffery Cable** joined the Department in April 2006 filling the position of University Administrative Manager. Originally from Greencastle, Indiana, Jeffery relocated to North Carolina from Ft. Lauderdale, Florida. He attended Indiana State University pursuing a degree in Marketing/Management, and has received his Public Manager Certification in 2005. Before joining the CCEE team, Jeff was employed in the department of Chemistry for six years. Jeff received the 2003 College of Physical & Mathematical Sciences SPA Awards for Excellence
- **Christine Franek** joined the Department in January 2006 as an Accounting Technician. Originally from Manhattan and then Syosset (Long Island), NY, Christine and her husband, Joe, relocated to North Carolina from Howell, NJ. She attended Long Island University where she pursued a degree in History. Her diverse work background includes, Brand & Sonnenschine, CPAs, Hadassah – The Women’s Zionist Organization of America, Schneider Optics, Inc. all of New York and Paramount Homes in New Jersey.
- **Toni Pascucci** joined the Department in August 2005 in the position of Undergraduate Student Services Assistant. Originally from Phillipsburg, NJ, Toni relocated to Apex, North Carolina with her husband in 1994. She graduated from Long Island University with a BS degree in Business Administration/Education and has worked for IBM in New Jersey and Apex Elementary and Embrex, Inc. in North Carolina. She has two sons enrolled at NC State and UNC Wilmington.

Resignations

- **Tish Attayek**, Administrative Manager for Contracts and Grants, left the department in February 2006 to become Assistant Director of Research Development in the College of Education. Tish had been with the department in various positions for more than 10 years.
- **Jane Smith** resigned as Administrative Officer effective June 30, 2006. Jane had been with the department since September 2001 and will pursue other opportunities at NC State University.

EXTENSION ACTIVITIES

During the 2005-06 year, Construction Extension activities covered a wide range of internal and external activities within the Department and the University resulting in some impressive outreach numbers which included educational events reaching a wide audience including international engineers, educators, students and government officials. Activities included development new outreach courses, teaching educational seminars, planning and coordinating continuing education and training events, conducting industry-endorsed specialized certification courses, supporting the work of various engineering and construction related trade associations, conducting applied research for private industries and engaging in international outreach programs to promote the international nature and strength of NC State University and to enhance recruiting efforts of promising international students. During this period, NC State students were exposed to many lectures given by distinguished alumni and by members of the construction industry that came to NC State to share their experiences in a wide variety of topics related to engineering and construction.

These extension activities generated **contract gross revenues** of approximately **\$335,000** with the following estimated breakdown:

- \$10,000 from UNC University System
- \$145,000 from private construction companies and concrete construction material suppliers through a partnership with the North Carolina Department of Transportation.
- \$180,000 from private design engineers, consultants, architects; and public educational organizations, State and city organizations, and non-NC DOT sources.

Specific highlights during this period of the notable leadership and outstanding extension work by **Mr. Roberto Núñez** and **Mr. Edwin Weaver**, Lecturers and Construction Extension Specialists, include:

- There was active participation and support by a number of trade associations closely connected with the Department of CCEE at NC State including the Associated General Contractors (AGC), the National Association of Home Builders (NAHB), The North Carolina Home Inspectors (NCHI), the American Society of Civil Engineers (ASCE), the North Carolina Utility Contractors Association (NCUCA), the North Carolina Chapter of the American Association of Safety Engineers (NCAASE), the North Carolina State Constructed Facilities Laboratory (CFL), the Construction Financial Management Association (CFMA), the Construction Professionals Network (CPN) and the American Concrete Institute (ACI).
- The Fundamentals of Construction Project Management Diploma Program, only its third year, is now widely accepted by the industry. It has serviced the needs of about 350 students representing more than 200 construction related organizations from the State of North Carolina. This model is now being used as a training resource for other trade organizations such as the Association for Plumbing, Heating and Ventilation Contractors of North America. The program is now offered twice a year and consists of six one-day courses offering such topics as Estimating and Bidding, Planning, Scheduling and Project Control; Financial Management for Construction, Construction Safety (10-hour OSHA training), Construction Contracts and Negotiation; and Spanish Culture and Language for Construction. Students who participate in the program and can demonstrate proficiency in five of the six offered courses attain their diploma.
- The development and presentation of Continuing Education Programs covered a variety of topics including *Fundamentals of Blueprint Reading*, *The ABC's of Building Quality Concrete Floors and Driveways*, *Age and Failure of Structures*, *Concrete Slab on Grade*, *Fundamentals of Stormwater Design*, and *Pervious Concrete Design*. These events, along with the yearly professional development series of 16 short courses entitled *Design Your Own Continuing Education Experience*, allowed ten CCEE faculty members to actively engage in extension activities.

Extension Activities (cont'd)

- The 3-day *ACI/NCDOT Concrete Field Technician Certification School* which includes classroom, field instruction, and examinations, is now 5 years old. It was presented approximately once a month and allowed about 250 attendees to receive ACI and NCDOT certifications to perform quality control and inspection work in concrete structures servicing the NC and USA construction communities.
- CCEE and NC State University continued its international extension and engagement opportunities by actively mentoring high school students into careers in civil engineering, by developing three libraries in Afghanistan and Ecuador, by developing international technical seminars, and by establishing unique programs such as the first *ACI Concrete Certification Corps* in the United States. This program allows NC State-CEM students interested in international work to transfer concrete technology to countries such as Ecuador. As a result, there are about 200 certified engineers and technicians working on domestic and international projects requiring the highest levels of quality control.
- Liaison between CCEE students, faculty, industry and alumni included the organization of the third and fourth annual NC State CCEE Engineering Golf Tournaments held at the Crooked Creek Golf Course in Fuquay Varina, NC. This event is designed to connect alumni and friends of the Civil, Construction, and Environmental Engineering Department with its faculty and students in a very relaxed atmosphere. The 2005-06 events attracted 230 players and 36 industry sponsors who enjoyed the camaraderie and relaxed atmosphere of a day of NC State University golf and pledged to support this tournament each year.

RESEARCH CONTRACTS AND GRANTS

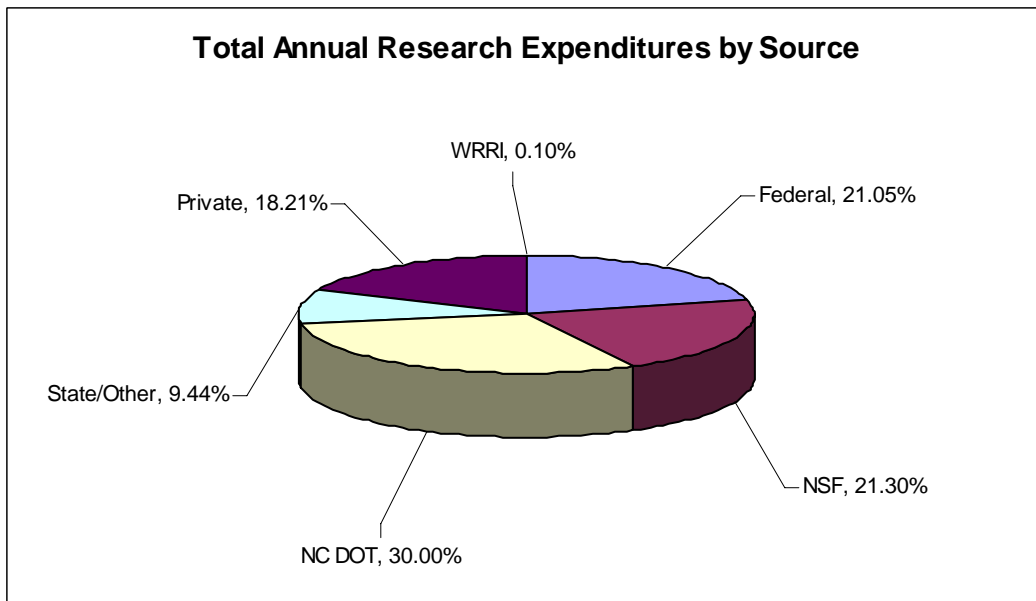
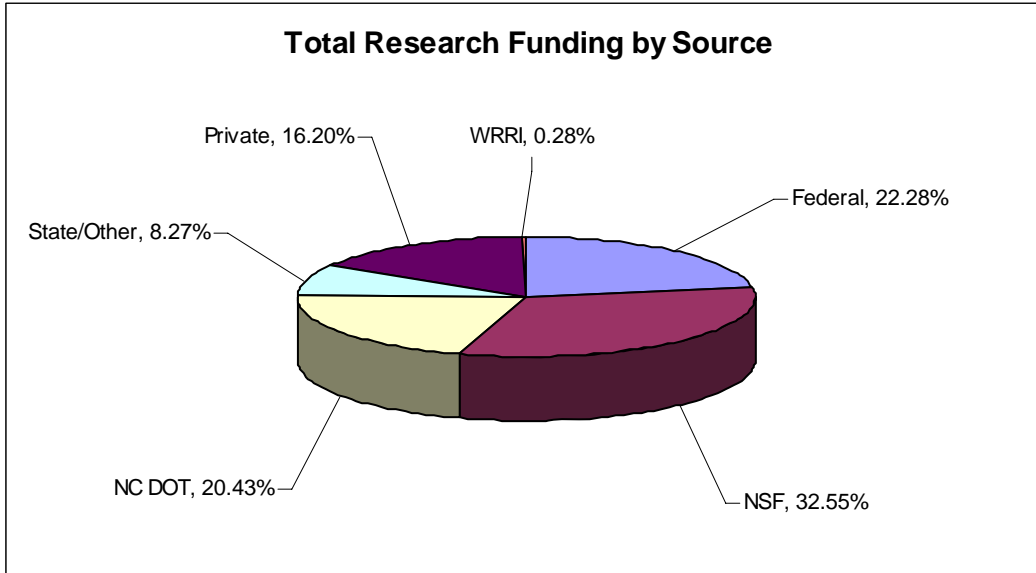
There are **120 active research projects** for the 2005-06 fiscal year. The total value of contracts, grants, and other external funding is **\$18,270,860.15** with annual expenditures of **\$5,116,656.33***. The following tables break down contract value and expenditures into sources of funding. Charts on research funds by source follow the tables. Research abstracts can be accessed at the departmental web site (<http://www.ce.ncsu.edu/abstracts>).

	Number	Total Contract Value (\$)	Annual Expenditures (\$)
New Research	36	3,631,224.00	1,148,652.51
Continuing Research	88	14,072,513.14	3,405,147.47
Subtotal	120	\$17,703,737.15	\$4,549,533.33
Industry Testing/Evaluation	n/a	232,123.00	232,123.00
Industry/Gov. Extension	n/a	335,000.00	335,000.00
Total	120	\$18,270,860.15	\$5,116,656.33

	Number	Total Contract Value		Annual Expenditures	
		Amount (\$)	%	Amount (\$)	%
Private	25	2,868,117.72	16.20	828,548.14	18.21
National Science Foundation (NSF)	27	5,762,778.93	32.55	968,906.41	21.30
NC Department of Transportation and/or Institute for Transportation Research and Education (NCDOT/ITRE)	30	3,616,770.29	20.43	1,364,651.33	30.00
Water Resources Research Institute (WRI)	1	49,084.00	.28	4,755.65	.10
State, Other	14	1,463,472.99	8.27	429,463.28	9.44
Federal	23	3,943,513.22	22.28	957,475.17	21.05
Subtotal Research	120	\$17,703,737.15	100	\$4,549,533.33	100
Industry Testing/Evaluation	n/a	232,123.00	n/a	232,123.00	n/a
Industry/Gov. Extension	n/a	335,000.00	n/a	335,000.00	n/a
Total	120	\$18,270,860.15	100	\$5,116,656.33	100

*The report above does not include June 2006 overhead calculations.

Research Funding and Expenditures by Source



DEPARTMENTAL SPONSORS

The following donations were received by the Department during 2005-06:

Name	Donor(s)
Sean McGrath Memorial Geotechnical Fellowship Endowment (S&ME)	Daniel B. Caton, James W. Caldwell, James M. Malone, Brett C. Davis, Jack J. Amar, Judith D. Thomas, Mark Osterhout, Derek C. Mohar, Catherine M. Rancka, John R. Browning, David S. Lipka, John T. Grier, Flex E. Shepard, HTL, INC, Atlas Engineering, H.E. Wahls, Scott E. Hancock, Romeo Guest Associates, Inc., Joel Clancy, Bruce L. Altstaetter, Arthur C. Ernst, S&ME, Randall Neuhaus, Jack Brake, Lawrence R. Matthews, Cathy S. Wright, Mary Ann Ryan, Dennis L. Brenmark, J. Thomas McGrath, John McGrady, Jennine B. Hicks, Colejenest & Stone, R.W. Weaver, III, David M. Barron, The Tensar Corporation, Bruce E. Carroll, J. Adam Browning, Flatiron Constructors, Inc., Roy H. Borden
Concrete Canoe	Earth Tech, SEPI Engineering Group, Kimley Horn & Associates
CCEE Special Events	S&ME, FN Thompson Co., Berry G. Jenkins, IQ Contracting, Dewberry
Progress Energy Scholarships – CE	Progress Energy Foundation
Withers & Ravenel Department Promotional Fund	Withers & Ravenel, Inc.
Paul M. Stephens Scholarship	Paul M. Stephens III, Landmark Builders
Berry G. and Glenda D. Jenkins Endowment Fund	Berry Jenkins
Charles Smallwood, Endowed Fellowship	Maha Chambliss
CCEE Advancement Fund	Exxon Mobil Corporation, Dora Zia, Donald H. Kline, Morton A. Barlaz, Dupont, CDM, HDR Engineering, Inc.
Hannibal G. Warren Memorial Fund	Hannibal G. Warren, Jr.
CFMA Triangle Chapter Scholarship	CFMA Triangle Chapter
E.I. Clancey Scholarship	Clancy & Theys
Senior Design – CCEE	Norfolk Southern, Foundation
NC Licensing Board Fund – Civil Engineering	NC Home Builders Association Educational Foundation
W. Grigg Mullen Memorial Scholarship Endowment	Otis Crowder

2005-06 Donations (cont'd)

Name	Donor(s)
B.D. Rogers Endowment	David C. Page, Robert J. Glusenkamp, J. Steven Phifer, Terry L. Johnston, J. Bennett Dellinger, Eric Reichard. Michael A. Mueller, Kevin T. Connelly, Richard B. Josephson
Delta Airport Consultants Endowment Fund	Charles Lamb, Avion, Inc.
H. Rooney Malcom Undergraduate Teaching Fund	NC Chapter – American Public Works Association
N.C. Association of Home Builders Scholarship	NC Home Builders Association Education Foundation
Beam Construction Co. Scholarship	Beam Construction Company
Lin Wiggins Memorial Scholarship	Carson Olin Wiggins, Jr.
Andy Sepelak Memorial Scholarship	Andy Sepelak, Mary York, Aaron York, Ben, York, IBM Corporation
NC Licensing Board for General Contractors Foundation	NC Licensing Board for General Contractors
CCEE Student Activities Fund	G.N. Richardson & Associates, Inc., Earth Tech, Withers & Ravenel, Inc., Joyce Engineering, Inc., Tower Engineering Professional, Inc., Stearns & Wheler LLC, URS Corporation, O'Brien & Gere, Hazen & Sawyer, P.C.
General Contractors Association of Raleigh Scholarship	General Contractors Association of Raleigh
ASCE Student Chapter	Ko & Associates, Hobbs, Upchurch & Associates, PA, D.H. Griffin Construction Co., LLC, Camp Dresser McKee
George Blessis Memorial Scholarship Fund	Janice B. Blessis