Tennessee Technological University

OFFICE OF RESEARCH
ANNUAL REPORT

Fiscal Year 2006-07

Tennessee Technological University is one of the member institutions governed by the Tennessee Board of Regents. The 46 institutions in this system include six senior universities, 13 two-year community colleges and 26 technology centers. More than 80% of all Tennessee students attending post-secondary institutions are enrolled in the Tennessee Board of Regents (TBR) system.

Administration and Staff

Office of Research

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Associate Vice President

Dr. Robby Sanders
Director

Mark Lynam
Coordinator

Kathy Reynolds
Secretary III

Sue Smith
Executive Aide

Sammie Sparks
Contract Compliance Assistant

Ellen Wolfe
Proposal Development Specialist

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MISSION OF THE OFFICE OF RESEARCH

The mission of the Office of Research is to promote, support, and facilitate research, scholarly, and creative activities of faculty and graduate students. The Office of Research supports the University community in obtaining externally funded support for research, scholarship, instruction/training, and public service in the context of scholarly excellence and sound ethical justification.

The personnel of the Office of Research support the University's mission by:

- Disseminating information on funding opportunities for research, scholarly, and creative activities.
- Providing background information for use in proposals.
- Assisting faculty in the development of proposals.
- Reviewing proposals for accuracy, completeness, and compliance with both University, state, and federal regulations.
- Preparing and negotiating grants/contracts.
- Administering Tennessee's Public Records Act (T.C.A. 49-7-120) relative to sponsored research and services.
- Executing awarded contracts and processing activation forms to establish accounts.
- Assisting faculty in protecting their ideas and implementing technology transfer activities in the best interest of all parties concerned.
- Monitoring compliance with the range of federal policies that regulate research activities in the following areas: responsible conduct of research, research ethics, human subjects research, and the humane care of laboratory animals used in research and experimentation.
- Conducting seminars and workshops on proposal writing and funding sources.

SUMMARY OF ACTIVITIES
2006-07

During fiscal year 2006-07, the University's Mission was supported through the Office of Research in the following ways:

- Grants and contracts externally funded numbered 171 with a value of $16,637,340.
- Grants and contracts received through the three Centers of Excellence and the STEM Center numbered 117 with a value of $12,353,937, which represents 74% of total dollars and 68% of grants and contracts received.
- Grants and contracts received through federal agencies numbered 79 with a value of $6,933,526, which represents 46% of grants and contracts and 42% of total dollars received.
- Grants and contracts received through state agencies numbered 70 with a value of $8,742,157 which represents 41% of all contracts and 53% of total contract dollars received.
- Industry contracts were third at 8 with a value of $568,772, which represents 5% of total contracts and 3% of total contract dollars.
- Various miscellaneous sources accounted for 12 contracts or 7% of total contracts with a value of $383,125 or 2% of contract dollars.
- Foundation contracts were fifth at 2 with a value of $9,760, which represents 1% of total contracts and .06% of total contract dollars.
- Proposals submitted for external funding numbered 190 with a value of $36,986,428.
- Proposals submitted through the Centers of Excellence and STEM Center numbered 124 with a value of $26,894,481, which represents 65% of proposals submitted and 73% of funds requested.
- Proposals submitted to federal agencies numbered 91 requesting $25,581,524, which represents 48% of proposals submitted and 69% of dollars requested.
- Proposals submitted to state agencies numbered 74 requesting $9,666,351 which represents 39% of proposals submitted and 26% of dollars requested.
- Proposals submitted to industry numbered 10 requesting $1,065,797 which represents 5% of proposals submitted and 3% of dollars requested.

- Proposals submitted to local agencies numbered 12 requesting $563,256 which represents 6% of proposals submitted and 2% of dollars requested.

- Grants and contracts received for research numbered 112 with a value of $11,576,413, which represents 65% of grants and contracts and 70% of total dollars received.

- Grants and contracts received for public service numbered 47 with a value of $3,711,068 which represents 27% of all contracts and 22% of total contract dollars received.

- Instruction funding was third at 10 with a value of $1,114,859, which represents 6% of total contracts and 7% of total contract dollars.

- Funds received for equipment purchases accounted for 2 contracts or 2% of total contracts with a value of $235,000 or .2% of contract dollars.

- Internal funds were provided in the amount of $116,506 for small grants to support faculty research in the form of ***research initiation and/or research development***. Twenty-eight projects involving 32 faculty members were supported. The average amount of support granted was $4,000 per faculty member.

- Internal funds provided for contract matching was $31,841, which included items such as equipment, faculty release time, student salaries and fees.

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FIGURE I

External Funds
Historical, Actual and Projected
2000-2010

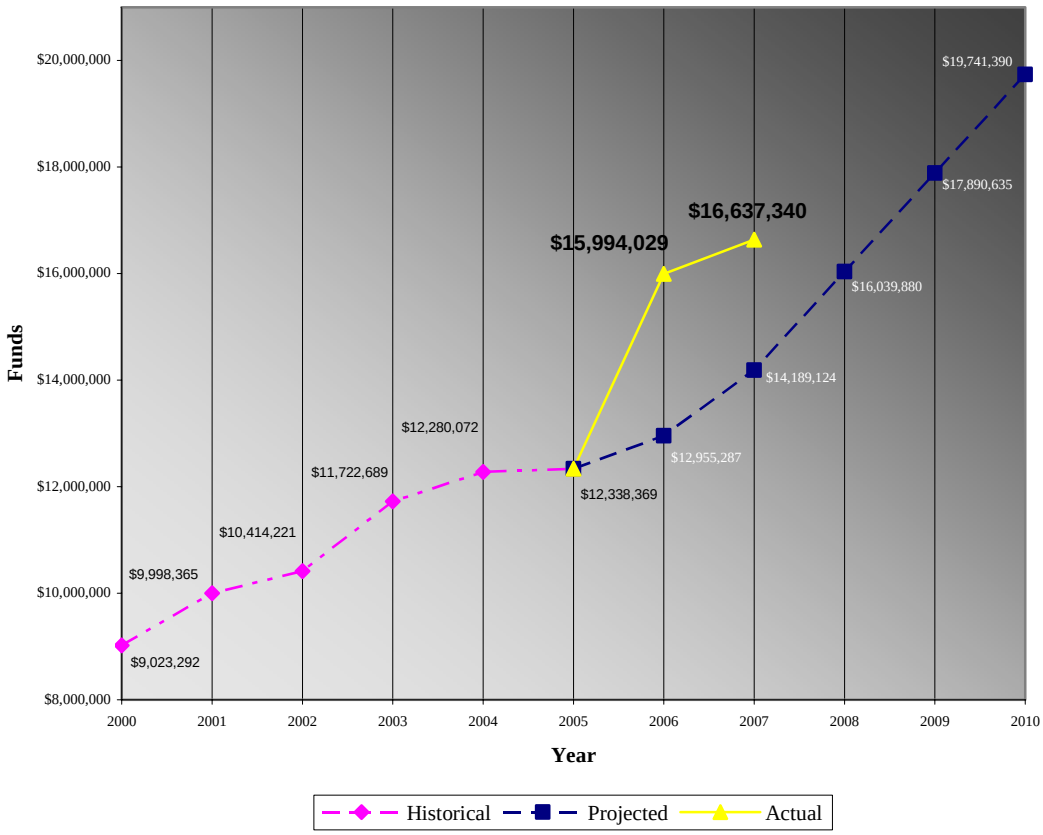

TABLE I

Proposals Submitted and Awards Received
By University Unit
FY 2006-07

University Unit	Proposals Submitted	Amount Requested	Awards Received	Amount Received
Agriculture & Human Ecology*	22	$1,313,801	16	$847,577
Arts & Sciences*	8	$617,506	8	$579,652
Business Administration*	8	$633,123	9	$489,663
Education*	19	$4,385,448	15	$2,207,503
Engineering*	2	$42,632	3	$77,620
Nursing	2	$896,792	1	$14,994
Interdisciplinary Studies and Extended Education	4	$2,194,785	1	$64,800
Administrative Offices*	1	$7,860	2	$1,594
C/E Energy Systems Research**	39	$8,914,578	26	$2,946,646
C/E Manufacturing Research**	28	$6,091,611	34	$5,185,559
C/E Water Resources Research**	46	$7,892,184	52	$3,588,486
STEM Center**	11	$3,996,108	5	$633,246
TOTAL	**190**	**$36,986,428**	**171**	**$16,637,340**

* Without Centers of Excellence or STEM Center
****** See Table II

NOTE: The number of awards received may be greater than the number of proposals submitted because proposals submitted in previous years could be awarded in the current year.

TABLE II

Proposals Submitted and Awards Received
Through Centers of Excellence and STEM Center
By Academic Unit
FY 2006-07

Center/Academic Unit	Proposals Submitted	Amount Requested	Awards Received	Amount Received
Energy Systems Research				
The Center	5	$1,052,719	6	$1,095,610
Chemical Engineering	7	2,096,568	2	466,498
Chemical Engineering/ Manufacturing and Industrial Technology	-	-	1	48,534
Civil and Environmental Engineering	9	1,177,609	7	290,031
Civil and Environmental Engineering/Mechanical Engineering	1	12,500	-	-
Electrical and Computer Engineering	5	1,275,930	3	467,285
Engineering Administration	-	-	1	90,000
Manufacturing Center	1	68,800	-	-
Manufacturing and Industrial Technology	2	1,043,730	1	23,984
Manufacturing and Industrial Technology/Electrical and Computer Engineering	1	334,666	1	50,389
Mathematics	-	-	1	97,879
Mechanical Engineering	6	1,667,074	3	316,436
Mechanical Engineering/Basic Engineering	1	35,000	-	-
Mechanical Engineering/Electrical and Computer Engineering	1	149,982	-	-
TOTAL	**39**	**$8,914,578**	**26**	**$2,946,646**
Manufacturing Research				
The Center	13	$3,063,075	12	$2,205,443
Chemical Engineering	2	45,000	3	75,276
Chemical Engineering/Mechanical Engineering	1	481,230	-	-
Computer Science	1	500,000	2	575,319
Electrical and Computer Engineering	6	1,470,366	5	304,880
Electrical and Computer Engineering/Mechanical Engineering	-	-	1	102,734
Engineering Administration	-	-	1	760,000
Manufacturing and Industrial Technology	1	36,000	-	-
Mechanical Engineering	4	495,940	10	1,161,907
TOTAL	**28**	**$6,091,611**	**34**	**$5,185,559**

Center/Academic Unit	Proposals Submitted	Amount Requested	Awards Received	Amount Received
Water Resources Research				
The Center	12	$2,611,225	8	$1,525,896
Agriculture	1	187,690	-	-
Biology	19	831,422	22	595,847
Biology/Civil and Environmental Engineering	1	30,000	2	39,151
Chemical Engineering	-	-	1	50,000
Chemistry	1	598,381	4	435,833
Civil and Environmental Engineering	4	425,450	4	131,597
Co-op Fisheries Unit	6	491,597	7	121,777
Co-op Fisheries Unit/Biology	-	-	1	35,850
Co-op Fisheries Unit/Civil and Environmental Engineering	-	-	1	70,000
Curriculum and Instruction	1	1,499,981	-	-
Engineering Administration	-	-	1	286,367
Human Ecology	1	1,216,438	-	-
University Police	-	-	1	296,168
TOTAL	**46**	**$7,892,184**	**52**	**$3,588,486**
STEM Center				
The Center	-	-	3	$324,746
Administrative Offices/Facilities and Business Services	1	$500,000	-	-
Curriculum and Instruction	2	165,566	1	300,000
Curriculum and Instruction/ Mathematics	1	296,872	-	-
Earth Sciences/Curriculum and Instruction	1	71,877	-	-
English/Curriculum and Instruction	2	248,539	-	-
Human Ecology	1	1,493,465	-	-
Mathematics	-	-	1	8,500
Minority Engineering Programs/ Mechanical Engineering	1	998,607	-	-
Physics	1	146,560	-	-
Physics/Curriculum and Instruction	1	74,622	-	-
TOTAL	**11**	**$3,996,108**	**5**	**$633,246**
GRAND TOTAL	**124**	**$26,894,481**	**117**	**$12,353,937**

TABLE III

Proposals Submitted and Awards Received
By Agency Classification
FY 2006-07

Agency Classification	Proposals Submitted	Amount Requested	Awards Received	Amount Received
Federal	91	$25,581,524	79	$6,933,526
State	74	$9,666,351	70	$8,742,157
Other	12	$563,256	12	$383,125
Industry	10	$1,065,797	8	$568,772
Foundations	3	$109,500	2	$9,760
TOTAL	**190**	**$36,986,428**	**171**	**$16,637,340**

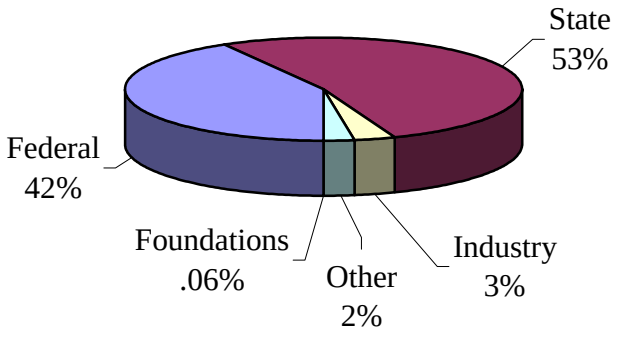

Figure 2. Percentage Funding of Proposals by Agency Classification
FY 2006-07

TABLE IV

Federal Awards Received by Agency
FY 2006-07

Federal Agencies	Awards Received
Army Research Office	$215,000
Federal Highway Administration	$96,624
National Aeronautics and Space Administration	$445,092
National Park Service	$100,174
National Reconnaissance Office	$400,000
National Science Foundation	$1,229,711
Naval Postgraduate School	$17,500
Oak Ridge Associated Universities	$5,000
Oak Ridge National Laboratory	$217,270
Office of Naval Research	$265,721
Sandia National Laboratories	$50,000
U. S. Department of Agriculture	$350,000
U. S. Department of Commerce	$66,498
U. S. Department of Defense	$46,461
U. S. Department of Energy	$978,808
U. S. Department of Justice	$651,570
U. S. Department of the Interior	$39,587
U. S. Fish and Wildlife Service	$95,819
U. S. Geological Survey	$65,417
TOTAL Direct Federal Dollars	**$5,336,252**

TABLE V

Proposals Submitted and Awards Received
By Activity
FY 2006-07

Activity/Use	Proposals Submitted	Amount Requested	Awards Received	Amount Received
Research	117	$26,230,681	112	$11,576,413
Public Service	53	$6,047,439	47	$3,711,068
Instruction	12	$3,386,966	10	$1,114,859
Equipment	8	$1,321,342	2	$235,000
Proprietary	-	-	-	-
TOTAL	**190**	**$36,986,428**	**171**	**$16,637,340**

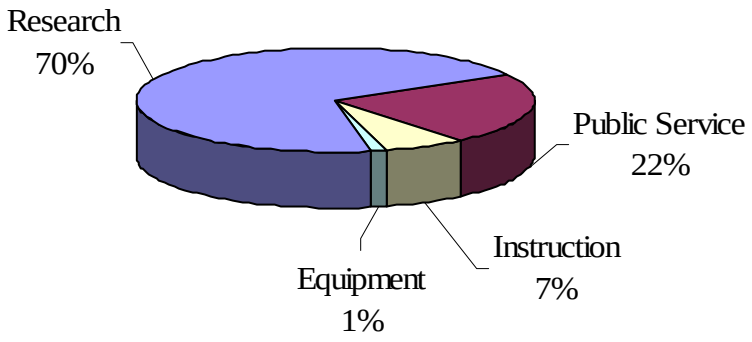

Figure 3. Percentage Funding of Grants by Activity
FY 2006-07

TABLE VI

Proposals Submitted and Awards Received
FY 2003-07

Fiscal Year	Proposals Submitted	Amount Requested	Awards Received	Amount Received
2003	193	$63,490,117	160	$11,722,689
2004	193	$32,987,186	159	$12,280,072
2005	153	$37,713,825	154	$12,338,369
2006	194	$55,412,527	174	$15,994,029
2007	190	$36,986,928	171	$16,637,340

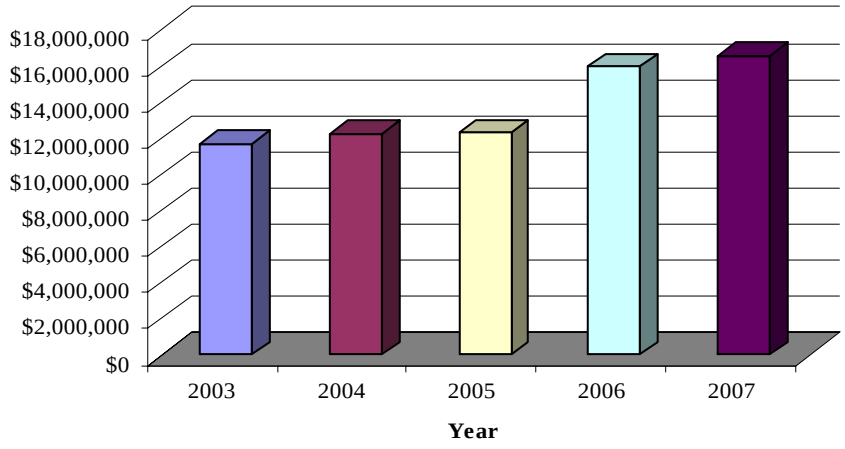

Figure 4. External Funds Received
FY 2003-FY 2007

TABLE VII

Awards Received and Award Amounts
By Classification
FY 2003-07

Fiscal Year	Federal		State		Industry		Other		Foundations	
	No.	Award Amount	No.	Award Amount	No.	Award Amount	No.	Award Amount	No.	Award Amount
2003	43	$3,167,670	59	$7,497,635	41	$699,434	17	$357,950	-	-
2004	60	$4,174,244	56	$6,895,156	31	$774,565	9	$400,162	3	$35,945
2005	61	$3,486,617	65	$7,722,363	16	$854,395	11	$269,997	1	$5,000
2006	74	$6,840,614	69	$8,060,198	22	$952,514	9	$140,703	-	-
2007	79	$6,933,526	70	$8,742,157	8	$568,772	12	$383,125	2	$9,760

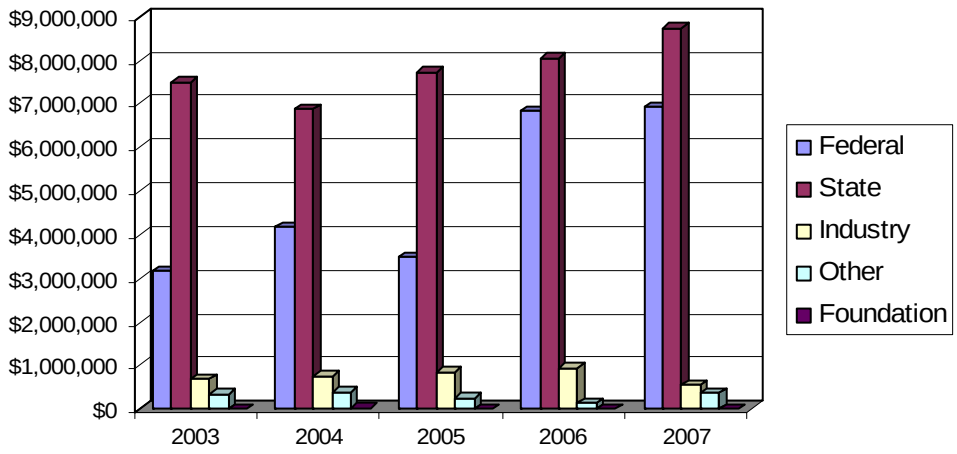

Figure 5. Awards Received by Classification
FY 2003-07

TABLE VIII

Awards Received and Award Amounts
By Type of Activity
FY 2003-07

Fiscal Year	Research		Instruction		Public Service		Equipment		Proprietary	
	No.	Award Amount	No.	Award Amount	No.	Award Amount	No.	Award Amount	No.	Award Amount
2003	124	$7,131,095	12	$2,499,765	23	$2,062,875	1	$28,954	-	-
2004	119	$7,530,479	8	$1,647,836	26	$2,678,234	5	$423,523	-	-
2005	113	$8,213,657	12	$1,015,064	24	$2,600,879	3	$358,735	2	$150,034
2006	120	$9,957,650	16	$2,547,334	34	$3,331,969	1	$35,000	3	$122,076
2007	112	$11,576,413	10	$1,114,859	47	$3,711,068	2	$235,000	-	-

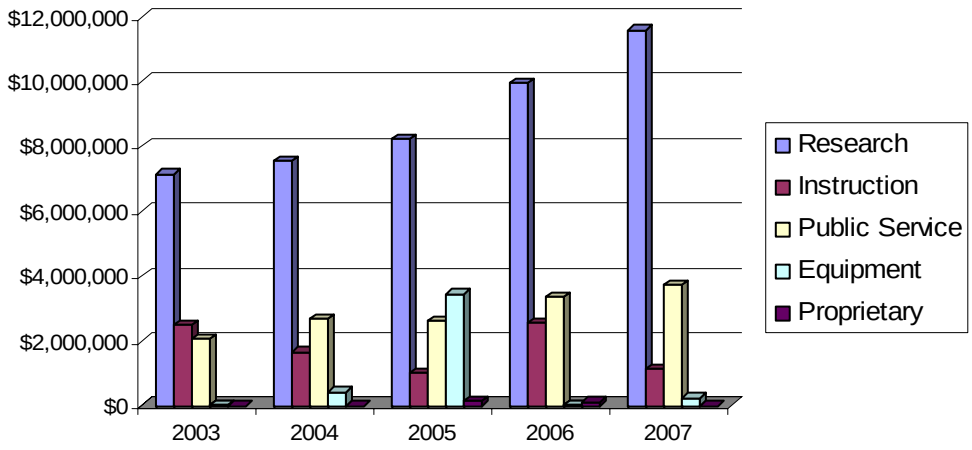

Figure 6. Awards Received by Type of Activity
FY 2003-07

RESEARCH COMPLIANCE AND GENERAL COMPLIANCE SUPPORT

Research Compliance

The Office of Research is responsible for monitoring compliance with the federal policies that regulate research activities in the following areas: responsible conduct of research, research ethics, human subjects research, the humane care of laboratory animals used in research and experimentation, the management of conflicts of interest in research, research integrity, export laws, and other areas of oversight.

It is the responsibility of the Research Office personnel to make sure these compliances are adhered to by the investigator(s) involved in the research. A research contract may involve both federal and state compliances in addition to those required by the funding agency, which could be private.

General Compliance Support

Several University Standing Committees are regulated federally and must meet certain compliance criteria, as well as other special committees. These committees are, in general, research related and are associated with the Office of Research. The Associate Vice President serves as the Executive Officer for these committees which include: the Institutional Committee for the Humane Care and Use of Laboratory Animals in Experimentation, the Institutional Review Committee for Human Subjects, the Advisory Committee on Patents and Copyrights, the Faculty Research Committee, and the Caplenor Faculty Research Award Committee. The Annual Report of each of these Committees is on file in the Office of Research and Graduate Studies.

INSTITUTIONAL COMMITTEE FOR THE CARE AND USE OF LABORATORY ANIMALS IN EXPERIMENTATION

The Institutional Committee for the Care and Use of Laboratory Animals in Experimentation provides for and protects the welfare of laboratory animals used for research and pedagogy as set forth by the University and in accordance with the Public Health Service Act (PHS Act) mandated by the Health Research Extension Act of 1985, Public Law 99-158, and its amendments from the U.S. Department of Agriculture, 9 CFR 9, Parts 1-3. The committee membership includes faculty, administrators, a veterinarian, and a community representative. The Committee reports to the Administrative Council.

2006-07 Meeting Dates

September 21, 2006 March 22, 2007

2006-07 Committee Members

Dr. Gerald Barker, Veterinarian
Dr. Bruce Greene, Agriculture
Dr. Steve Hayslette, Biology (Chair)
Dr. Wes Henry, clergy
Ms. Tammy Howard
Mr. Ray Jordan
Dr. Christy Killman, Health and Physical Education
Dr. Jessica Matson, Industrial and Manufacturing Engineering
Dr. Francis Otuonye, Executive Officer

Committee Actions:

- The Committee performed laboratory inspections in 2006-07 during the months of September and March.
- The Committee reviewed two applications for use of animals in experimentation-Dr. Mick Harvey, Department of Biology, and Dr. Steven Hayslette and Russell Skoglund, Biology. Both proposals were approved.

INSTITUTIONAL REVIEW COMMITTEE FOR HUMAN SUBJECTS

The Institutional Review Committee for Human Subjects serves as the review board in accordance with the requirements for the protection of human subjects as set forth by the regulations created by Congress (Code of Federal Regulations, Title 45, Part 46). The committee is composed of faculty, administrators, and persons not affiliated with the University. It reports to the Administrative Council. The use of human subjects in any experimental environment, whether it be research (funded or non-funded), or other scholarly activities such as surveys, questionnaires, and classroom experiences, must be reviewed and approved by the committee.

2006-07 Meeting Dates

September 11, 2006	January 22, 2007
November 6, 2006	April 2, 2007

2006-07 Committee Members

Dr. Sharon Berk, Biology
Dr. Tony Baker, English (Chair)
Dr. Patricia Campion, Sociology and Philosophy
Dr. Michael Clark, Music and Art
Dr. Jan Cupp, Counseling and Psychology
Dr. Ismail Fidan, Manufacturing and Industrial Technology
Dr. Linda Giesbrecht-Bettoli, Counseling and Psychology
Dr. Shelia Green, Nursing
Dr. Lachelle Norris, Sociology and Political Science
Mr. James Rogers, Minister, Smyrna Church of Christ
Dr. Jan Turner, Counseling and Psychology
Dr. Francis Otuonye, Executive Officer

Committee Actions:

- During the 2006-07 academic year, the Committee received 217 research proposals classified as exempt, 30 research proposals requiring expedited review from three Committee members each, and seven research proposals requiring full Committee review.
- Revisions for IRB Form A (the Research Review Cover Sheet) were approved and made available online in interactive format.
- The Committee approved the launch of an interactive online Form B; contents of Form B were not revised.
- The Committee approved the removal of a maximum membership number in order to allow for more flexible diversity of Committee members. At the February 2007 meeting of the TTU Administrative Council, this revision to the Committee's procedures was approved.

ADVISORY COMMITTEE ON PATENTS AND COPYRIGHTS

Tennessee Technological University acknowledges that the faculty and staff may from time to time conceive of an idea or discover a process that could lead to the development of a patent or the production of copyrightable materials. The University encourages such activities by the faculty and staff and recognizes its responsibility to see that ideas and discoveries are administered for the best interest of all parties concerned, including the public. The University has established an Advisory Committee on Patents and Copyrights for the purpose of advising the President on all matters involving patents and copyrights. Membership is composed of faculty and staff experienced in research, innovation, and the production of copyrightable materials. A majority of the membership is from the faculty.

2006-07 Meeting Dates

September 12, 2006	November 14, 2006	February 8, 2007
October 10, 2006	January 16, 2007	March 20, 2007

2006-07 Committee Members

Dr. Mohamed Abdelrahman, Electrical and Computer Engineering
Ms. Andrea Albertson, Student
Dr. Ali Alouani, Electrical and Computer Engineering (Chair)
Dr. Michael Best, Agriculture Engineering
Dr. Robert Clougherty, English
Mr. Myron Douglas, Student
Dr. Shelia Green, Nursing
Dr. Glen Johnson, Engineering Administration
Ms. Nancy Mielke, Library
Dr. Christine Miller, Decision Sciences and Management
Dr. Scott Northrup, Chemistry
Dr. Jan Turner, Counseling and Psychology
Dr. Francis Otuonye, Executive Officer

Committee Actions:

- Returned all invention disclosures to Dr. Mark Jackson.
- Terminated agreement with TechWerks for the Automatic Prescription Verification System License Agreement.
- Returned Multichannel Digital Stethoscope invention disclosure to Dr. Ali Alouani.
- Reviewed policy on royalty sharing from the commercialization of intellectual property and appointed an ad hoc committee to study the policy and make recommendations to the committee.
- Royalties received from Oak Ridge National Laboratory for the invention “Non-Optical Explosive Sensor Based on Two-Track Piezoresistive Micro-Cantilever” with a net balance of $3,895.44 to be distributed to inventors. The patent on this invention has been rejected in the U. S. and will not be pursued outside of the U. S.
- Filed a provisional patent for microbattery invention.

FACULTY RESEARCH COMMITTEE

The Faculty Research Program was established in the fall quarter of 1963 to: 1) stimulate interest in research on the part of the faculty; 2) provide institutional assistance to faculty members who wish to undertake research projects; and 3) assist in the dissemination of information developed in faculty research projects. The research program provides support for investigations of new research areas for the faculty members involved. The results of such support are expected to be publications or other dissemination of results and, where appropriate, proposals for external funding. It is anticipated that the results of faculty research will filter downward into the classroom, particularly to graduate courses. The Faculty Research Program is coordinated by the Faculty Research Committee. This committee consists of nine faculty members with the Associate Vice President of Research serving as Executive Officer.

2006-07 Meeting Dates

October 12, 2006
February 1, 2007
February 8, 2007

2006-07 Committee Members

Dr. Phillip Bettoli, Biology
Dr. Michael Burduck, English (Chair)
Dr. Ferdinand DiFurio, Economics, Finance and Marketing
Dr. Glenn Cunningham, Mechanical Engineering
Dr. Kim Hanna, Nursing
Dr. Xubin He, Electrical and Computer Engineering
Dr. Richard LeBorne, Mathematics
Dr. Dean Richey, Curriculum and Instruction
Dr. Kim Stearman, Water Center
Dr. Lisa Zagumny, Curriculum and Instruction
Dr. Francis Otuonye, Executive Officer

Committee Actions:

- The Faculty Research Committee awarded 28 projects involving 32 faculty members for a total amount of $116,506.
- Ten (10) Research Initiation proposals were funded, and 18 Research Development proposals were funded.
- The Committee held two proposal development workshops during fall semester.

CAPLENOR FACULTY RESEARCH AWARD COMMITTEE

The Caplenor Faculty Research Award, established in 1984 in honor of the late Dr. Charles Donald Caplenor, former Associate Vice President for Research and Dean of Instructional Development, is awarded annually to one member of the faculty of Tennessee Technological University for outstanding research accomplished while employed at the University.

2006-07 Meeting Dates

September 7, 2006
November 2, 2006

2006-07 Committee Members

Dr. George Buchanan, Civil and Environmental Engineering
Dr. Melissa Geist, Nursing
Dr. Tor Guimaraes, Business Administration
Dr. Joseph Hermann, Music and Art
Dr. Sastry Munukutla, Energy Center
Dr. Michael Redding, Biology
Dr. Kim Stearman, Water Center
Dr. Dean Richey, Curriculum and Instruction
Dr. Francis Otuonye, Executive Officer

Committee Actions:

- Dr. L. K. Crouch, Civil and Environmental Engineering, was the recipient of the 2006-07 Caplenor Faculty Research Award.

Appendices

Appendix A gives the external funds brought into the University by College/Area and by Departments/Units. The gift from the Tennessee Higher Education Commission (THEC) to the three Centers of Excellence is included in the external funding, which makes up 22% of the total external funds received. Administrators, faculty, and staff were responsible for approximately $13 million, or the remaining 78% of the total grant income.

Appendix B gives the total amount of research funds brought into the University from external sources by college/area, departments/units within a given college, the faculty/administrators/staff responsible for writing the proposal(s), the funding agency, and the amount of funding received.

Appendix C summarizes the intellectual property activity in the areas of patents and copyrights.

Appendix D summarizes the Faculty Research Committee awards.

Appendix A

Externally Funded Projects
by College/Area, Academic Unit and Funding Amount
Fiscal Year 2006-07

ADMINISTRATION		**$1,292,984**
Business Administration	$55,223	
Engineering Administration	1,171,367	
Research and Graduate Studies	1,594	
School of Interdisciplinary Studies	64,800	
AGRICULTURE & HUMAN ECOLOGY		**$847,577**
Agriculture	$161,748	
Human Ecology	685,829	
ARTS & SCIENCES		**$2,371,803**
Biology	$455,493	
Chemistry	807,329	
Computer Science	575,319	
Co-op Fisheries	257,627	
History	41,396	
Mathematics	97,879	
Physics	132,000	
Sociology and Political Science	4,760	
BUSINESS ADMINSITRATION		**$434,440**
Decision Science and Management	$434,440	

Appendix A, cont'd
Externally Funded Projects
by College/Area, Academic Unit and Funding Amount
Fiscal Year 2006-07

EDUCATION		**$2,278,998**
Counseling and Psychology	$133,297	
Craft Center	4,800	
Curriculum and Instruction	2,140,901	
ENGINEERING		**$3,258,690**
Chemical Engineering	$647,928	
Civil and Environmental Engineering	421,628	
Electrical and Computer Engineering	601,418	
Manufacturing and Industrial Technology	74,373	
Mechanical Engineering	1,513,343	
NURSING		**$14,994**
Nursing	$14,994	
RESEARCH CENTERS		**$6,137,854**
Center for Energy Systems Research	$1,228,943	
Center for Manufacturing Research	2,345,591	
Center for Management, Utilization and Protection of Water Resources Research	2,001,569	
STEM Center	561,751	
Total Amount for Externally Funded Projects		**$16,637,340**

Appendix B
Externally Funded Projects
by
College/Area, Department, Investigator(s),
Project Title, Funding Agency and Funding Amount
Fiscal Year 2006-07
(Principal Investigator is Named First)

Administration: 5 Administrators; 6 Projects			**$1,292,984**	
Business Administration	Virginia Moore	Small Business Development Center	Tennessee Small Business Development Center	$55,223
Engineering	Glen Johnson	College of Engineering Equipment Grant Fund	Tennessee Department of Commerce and Insurance	$35,000
		Advanced Portable Power Institute	U. S. Army Communications Electronics Command	$850,000
	Roy Loutzenheiser	TTU/UC Partnership: Meeting 7-12 Math & Physical Science through Engineering Applications	Tennessee Department of Education	$286,367
Research and Graduate Studies	Sammie Sparks	Community Opportunities, Training and Educational Services	Upper Cumberland Human Resources Agency	$1,594
School of Interdisciplinary Studies	Susan Elkins	New Occupational Teacher Training and Mentorship Program	Tennessee Department of Education	$64,800

Appendix B, cont'd
Externally Funded Projects
by
College/Area, Department, Investigator(s),
Project Title, Funding Agency and Funding Amount
Fiscal Year 2006-07
(Principal Investigator is Named First)

Agriculture and Human Ecology: 4 Researchers, 13 Projects			**$847,577**	
Agriculture	Douglas Airhart	Cookeville-Inventory and UF Plan	Tennessee Department of Agriculture	$13,000
		Livingston-Inventory and UF Plan		$8,450
		Tullahoma-Inventory and UF Plan		$600
		Crossville-Inventory and UF Plan		$3,420
	Ben Byler	Tennessee Association FFA Camp Clements Leadership Grant-Maintenance Worker	Tennessee Department of Education	$25,581
		Agricultural Education In-service Program		$14,348
		Tennessee Association FFA Camp Clements Leadership Grant		$92,952
		Camp Clements FFA Leadership Camp-Lifeguards		$3,397
Human Ecology	Sue Bailey	Tennessee Early Childhood Training Alliance	Tennessee State University/Tennessee Department of Human Services	$212,980
		FACS Vocational Education Basic Grant	Tennessee Department of Education	$29,282
	Sue Bailey and Betty Vaudt	Upper Cumberland Child Care Resource and Referral-Project REEL	Tenn. Department of Human Services via Signal Centers of Chattanooga	$58,000
		Upper Cumberland Child Care Resource and Referral and Inclusion Services	Tenn. Department of Human Services via Signal Centers of Chattanooga	$355,567
		UCCCRR-Project Students Against Meth (Project SAM)	Tenn. Commission on National and Community Service	$30,000

Appendix B, cont'd
Externally Funded Projects
by
College/Area, Department, Investigator(s),
Project Title, Funding Agency and Funding Amount
Fiscal Year 2006-07
(Principal Investigator is Named First)

Arts and Sciences: 26 Researchers, Projects 41			**$2,371,803**	
Biology	Bradford Cook	Threatened or Endangered Aquatic Insect Survey	U. S. Department of the Interior	$9,694
		Protocol Development for Long-Term Monitoring of Rare Fish at Big South Fork National River and Recreation Area	U. S. Department of the Interior – National Park Service	$29,893
		A Comparative Study of the Historical and Present Ecological State of the Emory River Watershed	U. S. Fish and Wildlife Service	$10,000
		Habitat Characterization of the Nashville Crayfish (*Orconectes shoupi*) in Mill Creek Watershed, Tennessee		$35,000
		Bioassessment of Post Oak Creek Watershed	Hull-York Lakeland Resource Conservation and Development	$10,600
		Recovery Evaluation of Threatened and Endangered Fishes in Abrams Creek, Great Smokey Mountains	National Park Service – Great Smokey Mountains	$38,869
	Michael Harvey	T & E Bat Inventory, Distribution and Monitoring	Ozark-St. Francis National Forest	$4,000
		Monitor the Populations of Three Species of Endangered Bats Found in Northern Arkansas	Arkansas Game and Fish Commission	$15,000
	Steven Hayslette	Mourning Dove Recruitment and Crippling Loss in Tennessee	U. S. Fish and Wildlife Service	$15,240
	Hayden Mattingly	Distribution, Status and Species-Habitat Relationships of the Rare Striated Darter *Etheostoma striatulum*	Tennessee Wildlife Resources Agency	$20,000
		Science Advisory Committee Coordination for the Northern Cumberland Plateau Habitat Conservation Plan	The Nature Conservancy	$6,000
		Science Committee Coordination for the Cumberlands Habitat Conservation Plan		$46,495

Appendix B, cont'd
Externally Funded Projects
by
College/Area, Department, Investigator(s),
Project Title, Funding Agency and Funding Amount
Fiscal Year 2006-07
(Principal Investigator is Named First)

Arts and Sciences, continued:				
Biology continued	Kenneth Morgan and Thomas Roberts	Hydrogeomorphic Classification and Assessment of Slope Wetlands on the Tennessee Highland Rim	Tennessee Department of Environment and Conservation	$82,126
		Monitoring Groundwater Hydrology and Selected Plant Communities at the Three Rivers Mitigation Bank	Tennessee Wildlife Resources Agency	$19,120
	Thomas Roberts	Collection of Deer Check Stations	Tennessee Wildlife Resources Agency	$3,000
	Thomas Roberts and Kenneth Morgan	Black Swamp Hydrogeomorphic Bottomland Hardwood Functional Assessment	Tennessee Wildlife Resources Agency	$10,000
		Development of Geo-Referenced Database to Identify and Inventory Wetlands at Little River Canyon National Preservation	National Park Service	$61,305
Biology/Civil and Environmental Engineering	Hayden Mattingly and Vincent Neary	Conservation and Recovery of Barrens Topminnow Populations Exposed to Invasive Mosquitofish	U. S. Fish and Wildlife Service	$24,151
		Conservation and Recovery of Barrens Topminnow Populations Exposed to Invasive Mosquitofish	Tennessee Wildlife Resources Agency	$15,000
Chemistry	Dale Ensor	Separation Studies of /f/-Elements	Oak Ridge National Laboratory	$14,270
		Chemistry Before Your Eyes	The Quaker Chemical Foundation	$1,500
	John Harwood	Application of CADDIS to an Impaired Mixed Urban/Rural Watershed	Tennessee Department of Environment and Conservation	$16,161
	Mona Wells	A Whole-Cell Biosensor Panel for Agricultural Endocrine Disruptors	BARD Liaison Office	$50,000
Chemistry/Water Center	Jeff Boles, Ed Lisic and Martha Wells	Methamphetamine Research: Environmental Impact and Detection	U. S. Department of Justice – COPS	$355,402
	Jeff Boles, Martha Wells, Mona Wells, John Harwood, and Jisook Kim	MRI/RUI: Acquisition of a Liquid-Chromatography-MS for Biological and Environmental Analysis	National Science Foundation	$369,996

Appendix B, cont'd
Externally Funded Projects
by
College/Area, Department, Investigator(s),
Project Title, Funding Agency and Funding Amount
Fiscal Year 2006-07
(Principal Investigator is Named First)

Arts and Sciences, continued:				
Computer Science	Frank Hadlock	Smart Card Health-Care Demonstration	State of Tennessee	$500,000
	Doug Talbert and Michael Rogers	VEHI Subcontract with Vanderbilt	Vanderbilt University	$75,319
Co-op Fisheries Unit	Phillip Bettoli	Mississippi River Sturgeon Telemetry Project	Tennessee Wildlife Resources Agency	$25,000
		Provision of Assessing Bycatch Mortality in Entanglement Gear from Watts Bar Reservoir		$2,000
	James Layzer	Research Directed at the Recovery of Endangered Mussels	U. S. Geological Survey	$18,868
		Developing and Testing of a Protocol for Monitoring Mussels		$46,549
		Reintroduction of Mussels into the Little Tennessee River into the Bypassed Reach Below Calderwood Dam	Tennessee Wildlife Resources Agency	$29,360
	James Layzer and Phillip Bettoli	TWRA Base Funds		$30,000
Co-op Fisheries Unit/Biology	Phillip Bettoli and Michael Redding	Dispersal, Stress Response and Delayed Mortality of Largemouth Bass Caught in Live-Release Tournaments	Tennessee Wildlife Resources Agency	$35,850
Co-op Fisheries Unit/Civil and Environmental Engineering	Phillip Bettoli and Vincent Neary	Tailwater Trout Investigation	Tennessee Wildlife Resources Agency	$70,000
History	Jeff Roberts and Michael Birdwell	Cumberland Plateau Consortium Teaching American History	White County Board of Education via U. S. Department of Education	$41,396
Mathematics	Sabine LeBorne	Theory and Application of Hierarchical Matrices in Multiscale Problems	U. S. Department of Energy	$97,879

Appendix B, cont'd
Externally Funded Projects
by
College/Area, Department, Investigator(s),
Project Title, Funding Agency and Funding Amount
Fiscal Year 2006-07
(Principal Investigator is Named First)

Arts and Sciences, continued:				
Physics	Sakir Ayik	Studies of Fluctuation Processes in Nuclear Collisions	U. S. Department of Energy	$36,000
	Raymond Kozub	Nuclear Physics with Radioactive Ion Beams	U. S. Department of Energy	$54,000
	John Shriner	Proton Resonance Spectroscopy	U. S. Department of Energy	$42,000
Sociology and Political Science and Women's Center	Lachelle Norris	Linking Lives: A Women's Mentoring Initiative for Nontraditional Students	American Association of University Women Educational Foundation	$4,760

Appendix B, cont'd
Externally Funded Projects
by
College/Area, Department, Investigator(s),
Project Title, Funding Agency and Funding Amount
Fiscal Year 2006-07
(Principal Investigator is Named First)

Business Administration: 2 Researchers, 7 Projects			**$434,440**	
Decision Sciences and Management	Curtis Armstrong	Governor's School for Information Technology Leadership	Tennessee Department of Education	$118,000
	Kevin Liska	TBR-Career Pathways	Tennessee Board of Regents	$9,450
		RODP Marketing Campaign		$200,000
		Tennessee Career Information and Delivery System (TDIDS)		$44,500
		EKG Training Online		$3,000
		Post Katrina Marketing for Southern University of New Orleans	State of Louisiana	$56,490
		Tennessee Seat Belt Education Campaign	Tennessee Road Builders Association	$3,000

Appendix B, cont'd
Externally Funded Projects
by
College/Area, Department, Investigator(s),
Project Title, Funding Agency and Funding Amount
Fiscal Year 2006-07
(Principal Investigator is Named First)

Education: 16 Researchers, 12 Projects			**$2,278,998**	
Counseling and Psychology	Barry Stein, Ada Haynes and Michael Redding	Project CAT: Assessing Critical Thinking Skills	National Science Foundation	$133,297
Craft Center	Gail Gentry	Hands-On Craft Program for Elementary School Students	Tennessee Arts Commission	$4,800
Curriculum and Instruction	Helen Dainty	Picture This. . .Success for Teachers and Their Students with Austism	Tennessee Higher Education Commission	$51,000
	Carl Owens	Special Ed Programs and Services	Tennessee Department of Education	$5,000
	Dean Richey	Tennessee's Early Intervention System	Tennessee Department of Education	$1,375,000
		Healthy Start for Upper Cumberland Families and Young Children	Holland T. Stephens Center	$12,876
	John Wheeler	Make A Difference Project	Tennessee Department of Education	$140,000
	Thomas Willis	TDE Special Education Institute – Strand I and II	Tennessee Department of Education	$247,266
Curriculum and Instruction/Child Development Lab	Jane Baker and Angie Smith	Tennessee Early Childhood Education Pilot Program	Tennessee Department of Education	$65,000
	Darrell Garber and Angie Smith	Child and Adult Food Care Program	Tennessee Department of Human Services	$33,264
Curriculum and Instruction/English	Kristen Pennycuff, Shannon Collins and Anthony Baker	Empowering Literacy Instruction	Tennessee Higher Education Commission	$140,000
Curriculum and Instruction/STEM Center	Anthony Holly	Developing Conceptual Understanding of Fractions and Decimals in K-4 Classrooms	Tennessee Higher Education Commission	$71,495

Appendix B, cont'd
Externally Funded Projects
by
College/Area, Department, Investigator(s),
Project Title, Funding Agency and Funding Amount
Fiscal Year 2006-07
(Principal Investigator is Named First)

Engineering: 45 Researchers, 69 Projects			**$8,834,793**	
Chemical Engineering	Joseph Biernacki	Multi-Scale Kinetics-Based Model for Predicting Mechanical Property Development of Concrete Containing Supplementary Cementitious Materials	University of Michigan Ann Arbor via National Science Foundation	$45,237
		Buckeye Experimentation of Cement With and Without Fibers	Buckeye Technologies, Inc.	$8,813
	Holly Stretz	Determination of Montmorillonite Nanocomposite Aggregation Rates Using Real Time X-Ray Diffraction Techniques at High Temperatures	U. S. Department of Commerce	$66,498
	Holly Stretz and Hope Sedrick	FY 2007 Summer Undergraduate Research Fellowship (SURF)	National Institute of Standards and Technology	$7,620
	Venkat Subramanian	Modeling Capacity Fade and Lifetime of Lithium-Ion Batteries for Satellite Applicatons	National Reconnaissance Office, DII	$400,000
	Donald Visco	Exploring the Effects of Self and Cross-Clustering on the Thermodynamics of Strongly Associating Systems	American Chemical Society	$21,226
		Developing Novel Scaffolds for Biological Molecules by Solving the I-QSAR Problem Using the Signature Molecular Descriptor	Sandia National Laboratories	$50,000
Chemical Engineering/ Manufacturing and Industrial Technology	Joseph Biernacki and Ahmed Elsawy	Manufacturing of Lightweight Aggregate from Fly-Ash	Tennessee Valley Authority	$48,534
Civil and Environmental Engineering	Daniel Badoe	Development of Tennessee Travel Demand Model Users' Group	University of Tennessee via Tennessee Department of Transportation	$7,000
	Steven Click	Improved Traffic Signal Efficienty in Rural Areas Through the Use of Variable Maximum Green Time	Mack-Blackwell Transportation Center	$23,819

Appendix B, cont'd
Externally Funded Projects
by
College/Area, Department, Investigator(s),
Project Title, Funding Agency and Funding Amount
Fiscal Year 2006-07
(Principal Investigator is Named First)

Engineering, continued:				
Civil and Environmental Engineering continued	L. K. Crouch	Rapid Repair of Highway and Airfield Pavements	Federal Highway Administration	$96,624
	Faisal Hossain	Integration of Global Precipitation Measurement Data Product with the Hydrologic Engineering Center-Hydrological Modeling System	University of Mississippi via NASA	$64,655
		Defining Optimality Criteria for the Effective Use of Satellite Precipitation Datasets in Land Surface Hydrology and Water Cycle Studies	NASA joint with University of Connecticut	$50,514
	David Huddleston and Faisal Hossain	Application of St. Louis Bay Water Quality Model to Develop TMDLs for Tributaries	Camp Dresser & McGee	$50,000
	Nitin Katiyar	Ivanhoe Fellowship	The Ivanhoe Foundation	$5,000
	Benjamin Mohr	Transport Kinetics of Internal Curing Water in High Performance Concretes	National Science Foundation	$90,088
		Nanoscale Differences Between Early and Late Age Ettringite in Portland Cement-Based Materials (Powe Award)	Oak Ridge Associated Universities	$5,000
	Vincent Neary	Everglades Hydrodynamic Model Review	U. S. Fish and Wildlife Service	$11,428
	Guillermo Ramirez	Intergovernmental Personnel Act Agreement	Naval Postgraduate School	$17,500
Electrical and Computer Engineering	Nasir Ghani	Collaborative-Hybrid Multi-Layer Network Control for Emerging Cyber-Infrastructures	U. S. Department of Energy	$175,000
	Xubin He	SGER: Distributed Symmetric Active/Active Metadata Management	National Science Foundation	$50,000
		Lightweight Metadata Virtualization	Oak Ridge National Laboratory	$15,000

Appendix B, cont'd
Externally Funded Projects
by
College/Area, Department, Investigator(s),
Project Title, Funding Agency and Funding Amount
Fiscal Year 2006-07
(Principal Investigator is Named First)

Engineering, continued				
Electrical and Computer Engineering continued	Xubin He and P. K. Rajan	REU Site: Research Experience for Undergraduates in Network and Communication Systems	National Science Foundation	$99,732
	Joseph Ojo	Mixed-Winding, High Phase Order Induction Machines with Multi-Phase, Multi-Level Converters for High Power Drive and Generator Applications	Office of Naval Research	$158,952
Electrical and Computer Engineering/ Mechanical Engineering	Mohamed Abdelrahman and Sally Pardue	REU Site: Research Experiences for Undergraduates in the Industrial Application of Sensing, Modeling and Controls	National Science Foundation	$102,734
Energy Systems Research	Wenzhong Gao	TTU Subcontract on MSU Electric Ship Research and Development Consortium (ESRDC) Project	Mississippi State University	$50,000
		Design Optimization of Hybrid Powertrains	Argonne National Laboratory via DOE	$50,000
	Sastry Munukutla	Center for Energy Systems Research	State of Tennessee	$939,700
		Center for Energy Systems Research Carryover		$25,097
		Service Account	Various	$30,813
Energy Systems Research/ Electrical and Computer Engineering	Wenzhong Gao and Joseph Ojo	Hybrid Fuel Cell Energy System Experimentation and Testing Station	Army Research Office	$133,333
Manufacturing Center	Kenneth Currie	Center for Manufacturing Research	State of Tennessee	$1,581,700
		Center for Manufacturing Research Carryover		$29,303
		UT-CIS Contract for Employee Services	The University of Tennessee Center for Industrial Services	$50,000
		Counter Gravity (Hitchiner) and Pressure Assisted Lost Foam Magnesium Casting	Oak Ridge National Laboratory	$110,000

Appendix B, cont'd
Externally Funded Projects
by
College/Area, Department, Investigator(s),
Project Title, Funding Agency and Funding Amount
Fiscal Year 2006-07
(Principal Investigator is Named First)

Engineering, continued				
Manufacturing Center continued	Kenneth Currie	General Work Study Program	Various	$187,294
		Testing and Design	Various	$52,916
	Wenzhong Gao and Chunsheng Wang	Hybrid Fuel Cell Energy System Experimentation and Testing Station	Army Research Office	$66,667
	Robert Qiu	STIR: Time Reversal for Ultra-Wideband (UWB) Sensor Networking	Army Research Office	$15,000
		Time-Reversal Based Range Extension Techniques for Ultra-Wideband (UWB) Sensors and Applications in Tactical Communications in Networking	Office of Naval Research	$106,769
		REU: Supplement to Time-Reversal Ultrawideband MIMO for Low Cost High Data Rate Communication	National Science Foundation	$6,000
	Chunsheng Wang	High Power CsH2 PO4-BITIVOX Membrane Fuel Cells for Military Applications	Department of Defense (via Tennessee DEPSCoR)	$46,461
		Battery Research	Proprietary	$20,000
Manufacturing Center/Electrical and Computer Engineering	Robert Qiu and P. K. Rajan	Time-Reversal Based Ultrawideband MIMO (UWB-MIMO) for Low Cost, High Data Rate Communications	National Science Foundation	$73,481
Manufacturing and Industrial Technology	Ismail Fidan	Integrating Rapid Prototyping Technology into a Manufacturing and Industrial Technology Curriculum	National Science Foundation	$23,984
Manufacturing and Industrial Technology/ Electrical and Computer Engineering	Ismail Fidan and Omar Elkeelany	The Development of a Remotely Accessible Rapid Prototyping Laboratory	National Science Foundation	$50,389

Appendix B, cont'd
Externally Funded Projects
by
College/Area, Department, Investigator(s),
Project Title, Funding Agency and Funding Amount
Fiscal Year 2006-07
(Principal Investigator is Named First)

Engineering, continued				
Mechanical Engineering	Stephen Canfield	Capture Concepts and Model Development for MXER Tether Systems w/Model Development	NASA	$25,000
	Glenn Cunningham	Industrial Technology Program Outreach and Facilitation	Tennessee Department of Economic and Community Development	$85,550
	Mahesh Panchagnula	Modeling Air Blast Atomization	Goodrich Turbine Fuel Technologies	$164,936
	Joseph Richardson	Crashworthiness Design Methodology for the Partnership for a Next Generation of Vehicles (PNGV)	Government Solutions International	$264,655
	Ying Zhang	GOALI: Platinum-Enriched Y+Y' Bond Coats for Next-Generation Single-Crystal Ni-Base Superalloys	National Science Foundation	$104,579
		Aluminide Coatings for Power-Generation Applications-Renewal	Oak Ridge National Laboratory	$78,000
		A Novel Low-Temperature Diffusion Aluminide Coating for Ultrasupercritical Coal-Fired Boiler Applications	U. S. Department of Energy	$78,327
	Jiahong Zhu	Tailoring Fe-Base Alloys for Intermediate-Temperature SOFC Interconnect Application	U. S. Department of Energy	$120,000
		Novel Composite Materials for SOFC Cathode-Interconnect Contact		$85,602
		CAREER: Novel Conductive Oxide Coatings on Metallic Interconnect for Immediate-Temperature SOFC Application	National Science Foundation	$80,194

Appendix B, cont'd
Externally Funded Projects
by
College/Area, Department, Investigator(s),
Project Title, Funding Agency and Funding Amount
Fiscal Year 2006-07
(Principal Investigator is Named First)

Engineering, continued				
Mechanical Engineering/ Curriculum and Instruction	Stephen Canfield and Dean Richey	Enabling Families, Infants, Toddlers and Preschoolers through Technology EIME Project	Tennessee Department of Education	$35,000
Mechanical Engineering/ Energy Systems Research	Stephen Canfield and James Beard	Advanced Development and Demonstration of 3 DOF Parallel Architecture Joint for Key In-Space Applications	NASA	$75,000
	Stephen Idem, Sastry Munukutla and James Beard	Reliability Development and Field Demonstration of CO2 Heat Pump Water Heaters	University of Maryland	$76,500
Mechanical Engineering/ Manufacturing Center	Glenn Cunningham and Kenneth Currie	Tennessee 3-Star Industrial Assessment Center	U. S. Department of Energy	$240,000
Water Center	Sharon Berk	Research Work Plan to Test Eight Biocides against *Legionella pneumophila* Sequestered with Food Vacuoles of *Acanthamoeba polyphaga*	The Dow Chemical Company	$54,000
	Yvette Clark	Local Planning Assistance Office-Geographic Information System Improvement Proposal	Tennessee Department of Economic and Community Development	$83,674
	Dan Dodson	Water Quality Study Iron Leachrate and Treatment	City of Crossville	$25,000
	Dennis George	Center for the Management, Utilization and Protection of Water Resources	State of Tennessee	$1,260,518
		Water Center Analytical and Computer Services	Various	$97,704
	Gay Shepherd	Comprehensive/Multi-Faceted Meth Response Project (SMART)	U. S. Department of Justice	$296,168
	Martha Wells	Evaluating Disinfectant By-Product Formation Potential in Source Water	Barge, Waggoner, Sumner & Cannon, Inc.	$5,000

Appendix B, cont'd
Externally Funded Projects
by
College/Area, Department, Investigator(s),
Project Title, Funding Agency and Funding Amount
Fiscal Year 2006-07
(Principal Investigator is Named First)

Engineering, continued				
Water Center/ Biology	Sharon Berk and John Gunderson	The Isolation and Characterization of Naturally-Occurring Amoeba-Resistant Bacteria from Water Samples	Middle Tennessee State University	$96,000
	Dennis George and Bradford Cook	Assessment of the Nutrient Assimilation Capacity of Jones Creek, Dickson County, TN	Water Authority of Dickson County	$83,505

Appendix B, cont'd
Externally Funded Projects
by
College/Area, Department, Investigator(s),
Project Title, Funding Agency and Funding Amount
Fiscal Year 2006-07
(Principal Investigator is Named First)

Nursing: 1 Researcher, 1 Project			**$14,994**	
Nursing	Tammy Howard	The Promise of Nursing for Tennessee Nursing School Grant Programs	Foundation of the National Student Nurses' Association	$14,994

Appendix B, cont'd
Externally Funded Projects
by
College/Area, Department, Investigator(s),
Project Title, Funding Agency and Funding Amount
Fiscal Year 2006-07
(Principal Investigator is Named First)

STEM Center: 3 Researchers, 4 Projects			**$561,751**	
STEM Center	Margaret Phelps	NSF ATE Eastern Corridor Teacher Education Project	Pellissippi State Technical Community College via National Science Foundation	$23,328
STEM Center/ Facilities and Business Services	Glenn Binkley and Margaret Phelps	STEM Center	U. S. Department of Agriculture	$300,000
		STEM Center	NASA	$229,923
STEM Center/ Mathematics	Margaret Phelps and Allan Mills	Middle School Math Partnership	Putnam County Schools	$8,500

Appendix C
Intellectual Property Activity
FY 2007

Disclsoure Number	Filing Date	Title	TTU or First Named Inventor	Other Inventors	Status
07-001-ID	9/16/2006	A low-Cr Fe-Co-Ni base alloy interconnect for reduced-temperature solid oxide fuel cells	Zhu, Jiahong	Geng, Shujiang	Prior Art Search Initiated
	11/17/2006	USDA releases Notice to Nurserymen of the Release of a new BeautyBerry Cultivar, 'Duet', a Callicarpa cultivar.	Bachman, Gary	Davis, Edgar	n/a
	11/27/2006	Architecture, Interiors and Furniture / A CD/DVD media collection.	Plant, Jeff		n/a
07-002-ID	3/27/2007	Superhydrophobic Surface by Contact Line Manipulation	Panchagnula, Mahesh	Vedantam, Srikanth Neti, Sudhakar	Prior Art Search Initiated
	5/17/2007	Compliant, Parallel-gravity Suspension System for a Tracked, Climbing Robot	Canfield, Stephen	Beard, Jamie	Provisional Patent Issued 05/17/2007 60/930,504
	5/29/2007	MyHealth Track	Massengill, George	Hadlcok, Frank	Provisional Patent Issued 05/29/2007 60/931,953

Additional IP Activity | FY 2007

TTU recognized by the USDA for the discovery of a new BeautyBerry Cultivar, 'Duet', a Callicarpa cultivar. TTU personnel associated with this activity include Gary Bachman and Edgar Davis.

TTU received royalty payments from the work of Dr. Jeff Plant's contributions to Architecture, Interiors and Furniture / A CD/DVD media collection.

Appendix D
2007-08 Faculty Research Committee Awards

RI - Research Initiation/RD-Research Development

Prop. No.	Title	Author(s)	Type	Asst.	Assoc.	Prof.	Dept.	Amt.
0727	Impact of Liquid Addition on Temperature of a Simulated Anaerobic Landfill Bioreactor	Lenly Weathers	RD		X		Civil and Environmental Engineering	$3,955
0705	Vegetation Analysis in a Naturally Occurring Inland Salt Marsh	Christy Carter	RI	X			Biology	$4,000
0714	Nanomaterials and Single Molecule Detection Initiative at Tennessee Technological University	Mona Wells	RI	X			Chemistry	$4,000
0729	A Programmable, Solenoid-Operated, Variable Intensity Rainfall Simulator for Investigating Runoff and Erosion	James Baier	RD	X			Agriculture	$3,991
0722	Parametric Study of the Base Connections of Highway Sign Structures	Sharon Huo	RD		X		Civil and Environmental Engineering	$4,000
0711	Comparison of the Forage Productivity of Native Warm-Season Perennial Grass Species	Bruce Greene	RD			X	Agriculture	$3,560
0724	Long-Term Resistance of Fly Ash Concrete to Alkali-Silica Reaction	Benjamin Mohr	RI	X			Civil and Environmental Engineering	$4,000
0726	Proposal to Review the Current Approaches to the Assessment of Performance of Domestic Electric Appliances and Their Impact on Energy Conservation Initiatives	Arun Sekar	RD			X	Electrical and Computer Engineering	$4,000
0704	An Economic Impact Analysis of the Hyder-Burks Agricultural Pavilion	Michael Best	RD		X		Agriculture	$4,000
0717	The Effect of Drugs on Tumor Development	Ileana Carpen	RI	X			Chemical Engineering	$4,000
0728	Multi-Sensor Data Fusion for Network Security	Ambareen Siraj	RI	X			Computer Science	$4,000
0702	Teacher Training for the Prevention and Indentification of Child Abuse	Marilyn Bruckman	RI	X			Curriculum and Instruction	$4,000
0707	Effects of Spinning-wing Decoys on Mourning Dove Harvest Vulnerability in Tennessee	Steven Hayslette	RD		X		Biology	$4,000
0723	Analysis of Heart Rate Variability Signals in Chronic Kidney Failure Patients Before and After Hemodialysis	Ahmed Kamal	RD	X			Manufacturing and Industrial Technology	$4,000

0715	Modeling Metropolitan Region-Wide Trip Generation	Daniel Badoe	RD		X		Civil and Environmental Engineering	$4,000
0713	A Computational Study on the Reactivity of Quinones in Biological Systems	Titus Albu	RD	X			Chemistry	$4,000
0703	An Application of Quantile Regression in Calibration	David Smith	RD	X			Mathematics	$4,000
0710	Writing the Medina: Culture and Identity in Urban Texts of Tunisia	Debbie Barnard	RI	X			Foreign Languages	$4,000
0720	Battery Charging Control Techniques for Plug-In Hybrid Electric Vehicles	David Gao	RI	X			Electrical and Computer Engineering	$4,000
0709	Race and Morisco Identity	Mark Groundland	RD	X			Foreign Languages	$3,250
0716	Buckling of Multi-Walled Carbon Nanotubes	George Buchanan	RD			X	Civil and Environmental Engineering	$4,000
0730	William Blake's Web of Design	Josephine McQuail	RD			X	English	$4,000
0708	Theory and Applications Involving Graph Algebras, Conditional Expectations, and Wavelets	Amy Chambers	RI	X			Mathematics	$4,000
0701	Upper Cumberland Opportunities in Service Learning for Counseling and Psychology Scholars	Sherrie Foster	RI	X			Counseling and Psychology	$4,000
0721	A Fast Delivery Protocol for Total Order Broadcasting	Xubin He	RD	X			Electrical and Computer Engineering	$4,000
0719	Collaborative Research-Comparative Study of Online versus On-ground Learning	Ismail Fidan	RD		X		Manufacturing and Industrial Technology	$6,000
		Bonita Barger			X		Decision Sciences	$1,000
		Ismet Anitsal		X			Economics, Finance and Marketing	$1,000
		Meral Anitsal		X			Economics, Finance and Marketing	$1,000
		Michael Allen			X		Mathematics	$1,000
0712	Resonance Characteristics of o-Acylnaphthols	David Crouse	RD		X		Chemistry	$4,000
0706	Constructing Shift Operators on C(C)	Andrzej Gutek	RD			X	Mathematics	$3,750
	28 proposals funded							$116,506.00
	32 faculty							