Office of the Vice Provost for Research
and
Dean of the Graduate School

Annual Report
Fiscal Year 2009

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Table of Contents

Executive Summary

Sponsored program awards processed by the **Office of Research Support and Sponsored Programs** during FY09 totaled $48,721,499, representing a decrease of 8 percent compared to FY08. Total sponsored program awards (including the Division of Agriculture) for FY09 totaled $64,092,617, representing an overall decrease of 3 percent compared to FY08.

The **Technology Licensing Office** had the highest number of invention disclosures in the last ten years, increasing the number and variety of technologies in the commercialization pipeline. There were eight patents issued and eight provisional patent applications were filed. More than sixty percent of patent costs were reimbursed by licensees and option holders.

Graduate School enrollment grew from 3287 to 3356 this year, a 2.1% increase.

Doctoral enrollment grew to an all-time high of 1043 in Fall 2008 compared to 1017 last year, a 2.6% increase.

A total of 144 **doctoral degrees** were awarded during the 2007-08 academic year compared with 115 the previous year and 134 in 2005-06. As of the reporting date, 160 doctoral degrees were awarded in 2008-09, an all-time high.

Over 13% of doctoral degrees earned by domestic students in 2007-08 were awarded to underrepresented **minority students**.

International student enrollment exceeded 1000, the first time in the history of the University of Arkansas. There were 114 countries represented on campus, up 13 from the last year.

The University of Arkansas joined a consortium of institutions for the placement of **Presidential Scholars from Rwanda**. Three university officials travelled to Kigali, Rwanda with representatives of the consortium to interview and select students. Fifty-two students were chosen. Ten will be placed at the University of Arkansas in Fall 2009.

The Graduate School successfully proposed a **new graduate certificate program** in Preparing for the Professoriate to begin in the Fall 2009.

The Graduate Council approved a **new masters degree program** in Athletic Training.

The Graduate School has initiated a **Doctoral Completion Project** in partnership with twelve Ph.D. programs with the working to identifying best practices in doctoral student retention.

In Fall 2008 there were 179 **Doctoral Academy Fellows** and 36 **Distinguished Doctoral Fellows**. The number of doctoral academy fellows represents a 79% increase over the past two

years. However, this number is expected to be negatively impacted over the next few years due to poor returns from endowment funds.

At total of 569 **travel grants** (up 25% from last year) were awarded to graduate students at an average of $783 per trip.

The **Office of Program Assessment** conducted reviews of the Ph.D. program in Environmental Dynamics and the B.A. program in International Relations.

The **Ph.D. program in Public Policy** had an enrollment of 74 students, including 16 African-American students, in Fall 2008. Minority students comprise one-third of the domestic student enrollment. A new specialization was created in Policy Studies on Aging in response to student demand in collaboration with the **Office for the Studies on Aging**.

Twenty-five students have completed the PhD in **Microelectronics-Photonics** since its inception, included three African-American graduates.

Dr. Larry Roe took over duties as the director of the **Arkansas Center for Space and Planetary Sciences**, replacing Dr. Derek Sears. Dr. Richard Ulrich assumed the post of graduate director for the Space and Planetary Sciences graduate degree programs.

Faculty and students associated with **Space and Planetary Sciences** graduate programs gave over 35 conference talks and published 19 journal articles, including one paper in *Science.*

Fifty-two students were enrolled in **Cell and Molecular Biology** graduate programs this year with six completing their Ph.D. degrees. One student paper was ranked among the top 1% of papers published in the *Journal of Biological Chemistry.*

One **University of Arkansas Press** publication, *War on Error* by Melody Moezzi, was ranked number one in three Amazon.com sales categories and was selected as required reading for all first-year students at the University of Dayton.

The Star of Arkansas supercomputer completed its first year as the centerpiece of the **Arkansas Center for High Performance Computing**. The Star of Arkansas was among the 500 fastest computers in the world in June 2008 and ran over 29,200 jobs using 7.5 million hours of computer time in its inaugural year.

During the past year, **Testing Services** administered 454 test sessions taken by over 11,000 students and prospective students.

The **Survey Research Center** collected twice the number of responses for the Arkansas Poll in only half again as much time by increasing interviewer efficiency. The Poll's prediction of the November 2008 Arkansas lottery vote was within 0.1% of the actual outcome.

Research Support and Sponsored Programs

Proposals and Awards

Award Administration

The Office of Research Support and Sponsored Programs (RSSP) accepted a total of 418 awards from various sponsors during FY2009. Total sponsor funding received for FY2009 is $48,721,499[1], representing a decrease of 8.07% compared to FY2008. The Division of Agriculture accepted and/or administered research support in the amount of $15,371,118[2]. As shown in Table 1, University of Arkansas external support for sponsored activities received FY2009 was $64,092,617, showing an overall decrease of 3% from the prior year.

The composition of total FY2009 awards by funding source included $44,321,895 (69%) from federal sources, $8,047,693 (13%) from state sources, and $11,723,029 (18%) from other funding sources such as industry and private foundations. These proportions reflect a greater fraction of total awards from federal sources as compared to industrial and private foundation awards.

Table 1. Historical Summary of Awards by Unit, FY02-FY09

	TOTAL AWARDS							
Unit	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009
ADMIN	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 957,967
AFLS	$ 16,259,724	$ 14,629,058	$ 15,193,476	$ 17,335,331	$ 14,931,201	$ 13,686,441	$ 14,811,857	$ 19,989,692
ARCH	$ 1,814	$ 2,046,916	$ 527,989	$ 1,433,944	$ 1,778,349	$ 1,043,038	$ 586,961	$ 855,246
ARSC	$ 17,986,408	$ 14,333,548	$ 27,408,401	$ 20,634,520	$ 19,886,493	$ 17,220,638	$ 19,891,658	$ 21,308,726
CTED	$ -	$ -	$ -	$ -	$ -	$ -	$ 100,000	$ -
EDUC	$ 5,439,329	$ 5,302,161	$ 6,494,183	$ 5,348,988	$ 7,676,504	$ 6,368,064	$ 7,272,031	$ 7,176,954
ENGR	$ 9,579,796	$ 7,508,027	$ 7,466,224	$ 10,399,587	$ 20,994,561	$ 10,992,697	$ 17,935,215	$ 8,755,641
GRAD	$ -	$ 164,357	$ 176,346	$ 197,136	$ 615,541	$ 1,527,150	$ 436,831	$ 649,833
LAW	$ -	$ 150,904	$ 222,180	$ 39,744	$ 46,510	$ 117,853	$ 89,529	$ 11,000
LIBR	$ -	$ 28,000	$ -	$ 30,000	$ -	$ -	$ -	$ -
VCAA	$ 129,225	$ -	$ -	$ 355,000	$ 1,028,362	$ 43,418	$ 70,000	$ 700
VCFA	$ 1,424,638	$ 35,864	$ 823,730	$ 1,010,333	$ 1,736,322	$ 3,114,851	$ 1,578,067	$ 1,386,081
VCSA	$ 1,516,940	$ 3,313,565	$ 2,822,405	$ 1,682,489	$ 2,876,985	$ 1,959,914	$ 2,482,727	$ 1,803,320
WCOB	$ 258,977	$ 838,162	$ 1,549,525	$ 1,135,109	$ 775,381	$ 1,501,740	$ 918,644	$ 1,197,457
Total	**$ 52,596,851**	**$ 48,350,562**	**$ 62,684,459**	**$ 59,602,181**	**$ 72,346,209**	**$ 57,575,804**	**$ 66,173,520**	**$ 64,092,617**

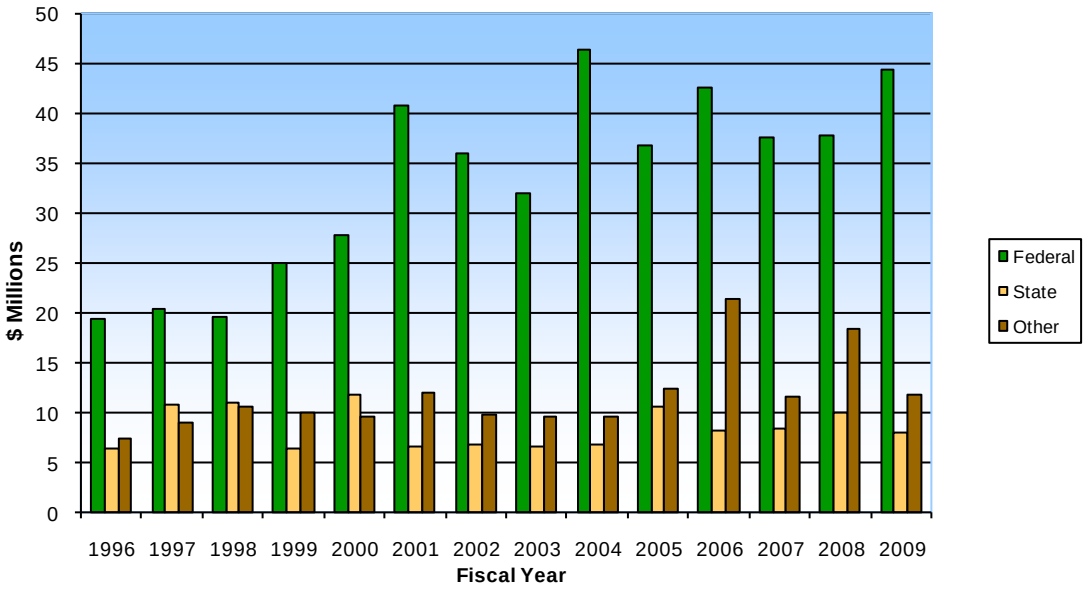
[1] Includes $1.986M in federal funding which is being administered by the Division of Agriculture under special circumstances.

[2] To avoid "double counting," this figure does not include the $1.986M administered by the Division of Agriculture as previously noted.

Table 2. Summary of Awards by Funding Source FY2009

Unit	Federal	State	Other	Total
ADMIN	$ 957,967.00	$ -	$ -	**$ 957,967**
AFLS	$ 11,673,214	$ 516,435	$ 7,800,043	**$ 19,989,692**
ARCH	$ 147,960	$ 707,286	$ -	**$ 855,246**
ARSC	$ 18,015,600	$ 1,986,051	$ 1,307,075	**$ 21,308,726**
CTED	$ -	$ -	$ -	**$ -**
EDUC	$ 3,845,816	$ 2,735,934	$ 595,204	**$ 7,176,954**
ENGR	$ 5,321,868	$ 1,979,457	$ 1,454,316	**$ 8,755,641**
GRAD	$ 569,981	$ 23,280	$ 56,572	**$ 649,833**
LAW	$ -	$ -	$ 11,000	**$ 11,000**
LIBR	$ -	$ -	$ -	**$ -**
VCAA	$ -	$ -	$ 700	**$ 700**
VCFA	$ 1,386,081	$ -	$ -	**$ 1,386,081**
VCSA	$ 1,803,320	$ -	$ -	**$ 1,803,320**
WCOB	$ 600,088	$ 99,250	$ 498,119	**$ 1,197,457**
Total	$ 44,321,895.00	$ 8,047,693	$ 11,723,029	**$ 64,092,617**

Figure 1. Award Trends by Source



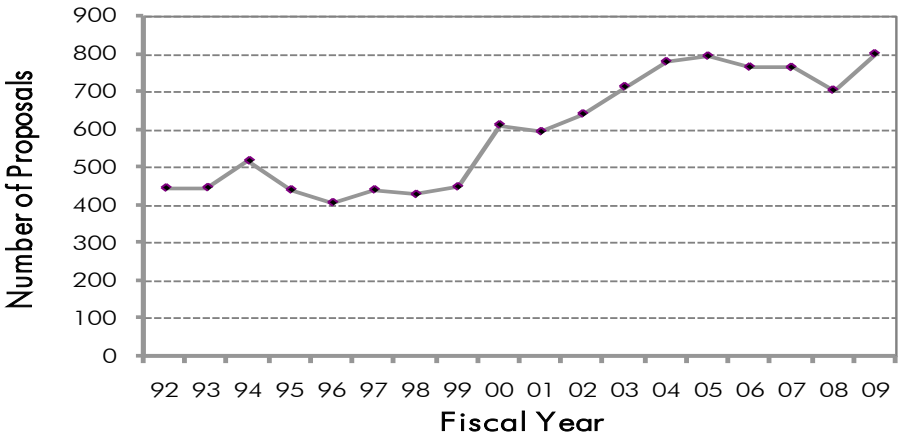
Proposal Development and Submission

RSSP assisted with the development and submission of 800 proposals and requests for continuation, exclusive of requests for no-cost extensions, in FY2009. Total funds requested were $257,771,878, an 85% increase as compared to FY2008. This includes requests of $214,467,512 (43%) for federal funding, $16,533,255 (3%) for state funding and $268,009,794

(54%) for other types of funding. Figure 1 illustrates the history of submissions from FY1992 through the current fiscal period.

During FY2009 the number of proposal submissions to all sources increased by 14% over the previous fiscal year. This includes 411proposals (51%) submitted to the federal government, 264 proposals (33%) to state government, and 125 proposals (16%) to other funding sources such as private foundations and industry.

Figure 2—Proposal Submissions by Fiscal Year



RSSP Highlights for FY2009

Establishment of the Research Administrators Post (RAP)

RSSP has been severely understaffed for a number of years. In order to improve services to investigators/programs directors, RSSP organized a University-wide group of administrators who wish to improve their understanding and assist investigators/ program managers to comply with of the rules, regulations, policies and procedures which govern the administration of sponsored activities. All members are volunteers. Meetings are held monthly and attendance varies, usually forty to forty-five attend each meeting.

Meeting topics are selected based on member needs and request. In addition to discussing compliance, the group attempts to identify areas of common concern and/or frustration and improve the processes which hinder the effective and efficient administration of sponsored projects. The first area addressed by the group was the processing of fellowship/stipend appointments which, historically, have taken an inordinately long time to process and often result in graduate students having unreasonably long waits for their checks. In conjunction with Student Financial Aid and Research Accounting, the process was streamlined, timelines for submission elucidated, and a new, electronic form is being created. The group has also addressed the use and interpretation of the University's Direct Cost Policy, project budget reallocations, and American Recovery and Reinvestment Act (ARRA or "Stimulus" funding) compliance and reporting requirements.

A major undertaking of the group is the creation of an administrative managers' manual, aka "Administrator's Handbook" for use by all units. The goal is to provide authoritative information and advice which will ensure consistency and compliance university wide. It will be designed to allow quick, easy updates and will be available in electronic format. Since this is a very large undertaking, a subgroup of administrators and faculty/investigators has begun working on the Post Award Management module. Also to be created are Preaward (Proposal) Management and Award Negotiation and Acceptance. From the Administrator's Handbook the group further hopes to create a handbook for investigators/program managers to assist them proposal creation and submission, post award management, and project closeout.

RSSP Compliance

RSSP has primary responsibility for facilitating investigator compliance with regulations and policies governing research which includes human subjects and/or live vertebrate animals. RSSP maintains all records and correspondence, arranges protocol submissions and distribution, schedules meetings, and generally supports the committees and their members who conduct the primary review, approval, and continuing review of these activities.

Institutional Review Board (IRB)

The IRB continues to be the busiest compliance committee on campus. Investigators submitted over 600 new protocols for review and approval. The IRB also completed a new policy and procedures manual which will be submitted for institutional review and approval. With the implementation of the new policy and procedures, many projects will no longer require submission to the IRB for approval or exemption. These changes will not affect the University's ability to comply with federal regulations and will decrease the time needed for project approval. In addition, the IRB now offers on-line training for investigators through the Collaborative Institutional Training Initiative (CITI). CITI, a collaborative effort between research institutions and the federal government, is a subscription service providing compliance education to all members of the research community whose institutions are affiliated with CITI. (CITI also provides instruction in responsible conduct of research.)

Institutional Animal Care and Use Committee (IACUC)

The IACUC reviewed and approved a record number of protocols this year as a result of the increased use of vertebrate animals in both sponsored and unsponsored research activities. (See Central Lab Laboratory Animal Facility below for additional information.) As a result of the increased number of animals requiring veterinary surveillance, the UA Veterinarian, Dr. John Hahn, was called upon to provide increased support and assistance. He also provided training in surgical techniques and pain management. The IACUC completed all semi-annual facility reviews on time. There were no findings of significant non-compliance noted at any facility. The USDA Assurance was successfully renewed. The new expiration date is 28 February 2010. Last year's implementation of mandatory training (available online through the Laboratory Animal Training Association) for all individuals actively involved in animal research continues to be successful and popular. Investigators, their staff, and students, report that the training is

both convenient and pertinent. Most individuals have completed more than the mandatory modules, taking advantage of the documentable, no-cost training available on a variety of topics.

While Environmental Health and Safety, Facilities Management, has primary compliance responsibility, RSSP also provides administrative support for the Biological Safety, Radiation Safety, and Toxic Substances Committees. RSSP staff members are responsible for arranging meetings, managing committee appointments, collecting and distributing protocols and meeting materials as required, and handling routine correspondence. Of these three committees, only the Biological Safety Committee has seen a significant increase in submissions.

Responsible Conduct of Research

Primary responsibility for investigating allegations of research misconduct lies with the Research Council. RSSP provides administrative support for the Council by arranging meetings, distributing materials, etc. In addition, the Director of RSSP is a regular presenter for the Graduate Learning Series, a program initiated by the Graduate School to provide graduate students with training in research responsibility. A three-course series is available in every Fall semester. Students who complete the prescribed courses are presented with a certification of completion.

Export Control

The number of research activities, externally and internally funded, which involve technology controlled by federal regulations continues to increase. With the assistance of the Office of Technology Licensing (OTL), RSSP provides training and assistance in identifying controlled activities for faculty, staff, and students. Training is available in a group setting or individually as appropriate to the situation. In the event that the investigator, with the assistance of OTL and RSSP, cannot definitively determine control status and classification, RSSP refers projects to the Office of General Counsel for review by one of two external legal firms retained to provide assistance. Once controls and controlled technology have been appropriately identified, RSSP reviews and approves all technology control plans submitted by investigators and maintains all records and certifications of data security.

Information Technology

RSSP has not been able implement database software which allows the internal routing and approval of proposals and research protocols. InfoEd, which has been the provider for several years, continues to give unsatisfactory service and the software is unreliable. InfoEd announced license increases in excess of 200% for the upcoming year. The RSSP database manager, Mark Larmoyeux, has worked with RSSP and OTL to identify new software which is reasonably priced and has a sound reputation for performance. Subject to the availability of sufficient funding and institutional support, RSSP will phase in new software over the next year. Less expensive, externally hosted software is being implemented for OTL and will “go live” in the next few months. In the next phase, RSSP will replace InfoEd Proposal Tracking and IRB software and replace it with COEUS software (http://coeus.org/), an Oracle based application, which supports proposal creation and electronic routing and submission as well as award

tracking. The COEUS Consortium is composed fifty research intensive universities, all members being in the top 500 research universities. While 25% of the membership is in the top 50 universities, over 10% of the members receive less than $50M for sponsored research. Given these statistics, the software appears to be well suited to serve the University's current research portfolio and robust enough to continue serving as the portfolio grows.

Research Support & Sponsored Programs Review

At the invitation of the Provost, external reviewers from three research intensive universities performed a review of research and sponsored programs support provided to investigators/program managers by all administrative offices having as primary duties the support of sponsored research. Those offices include RSSP, Office of Technology Licensing, and Research Accounting. The entire report, available on the RSSP web pages, was primarily positive in its findings. In addition to noting the considerable growth the University has experienced in recent years, the reviewers also pointed out that administrative office staff and resources have not grown commensurate with the demands of our growing research program. The reviewers suggested a reorganization of the current infrastructure and significant increases in staffing. Increasing the number trained personnel at the departmental and college level was encouraged as was increasing the opportunities for professional development for research administrators in all support areas. The importance of acquiring up-to-date software and technology to improve internal processing, tracking and reporting was stressed.

Technology Licensing Office

Executive Summary

The Technology Licensing Office juggles two considerations in the initial decision to pursue an invention:

1) Is the technology protectable? and
2) Can we find a company that wants to take it to market?

and we have a third consideration once a technology is licensed:

3) What can we do to help move our technology from the shelves to the world?

We need to balance these considerations with a fourth consideration:

4) How will our actions impact our client, which is (per Board of Trustees Policy 210.1) the University, the State of Arkansas, and the inventors themselves?

This year, we had the highest number of invention disclosures in the last ten years, increasing the number and variety of technologies in the commercialization pipeline. Perhaps due to our focus

on early patentability evaluations, we have plateaued (at least for now) in patent costs, and once again spent less in patenting than the revenues available to us. Despite the difficulties caused by the United States Patent and Trademark Office (USPTO), we had eight patents issued and filed eight provisional patent applications. More than sixty percent of our patent costs were reimbursed by licensees and option holders.

Our licensing officers have worked on a variety of paths to commercialization, including the Walton College MBA business plans, tight relationships with Innovate Arkansas, and the traditional method of identifying potential targets and working with them. (We also worked with the Arkansas Innovation Marketplace this spring to put in place another form of passive marketing.) We optioned three technologies to Walton College MBA business plan teams (and a fourth technology was optioned to a starch manufacturer). Two of the teams won significant competitions with their business plans, and all three are planning to commercialize them here in Arkansas. We negotiated seven new licenses, including one to a new Arkansas start-up company and one to an existing in-state company. We licensed two additional technologies to existing Arkansas start-up companies, and renegotiated a license after a buy-out of an Arkansas company (with the company deciding to stay in-state). Finally, we assisted in negotiating a book contract for two state extension employees.

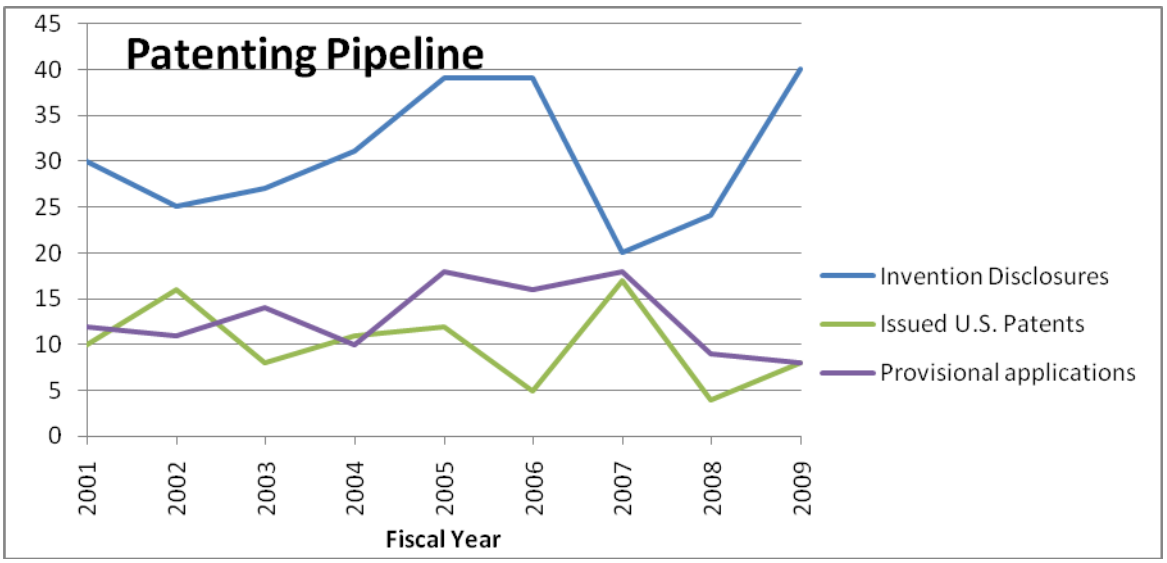
In other activities which help move our University's ideas along the commercialization path, we helped obtain more than $500K in sponsored research, patenting cost reimbursements, or the like from state resources, negotiated uncounted nondisclosure agreements, SBIR/STTR subcontracts, and other agreements. We also helped with export control issues as appropriate.

Three graduate students, two law students and an MBA, interned with us this year, and an engineering undergraduate joined us as the year closed. Over the last year, we lectured to more than 200 faculty, students, and other people to raise the awareness of our office and the potential pitfalls relating to intellectual property.

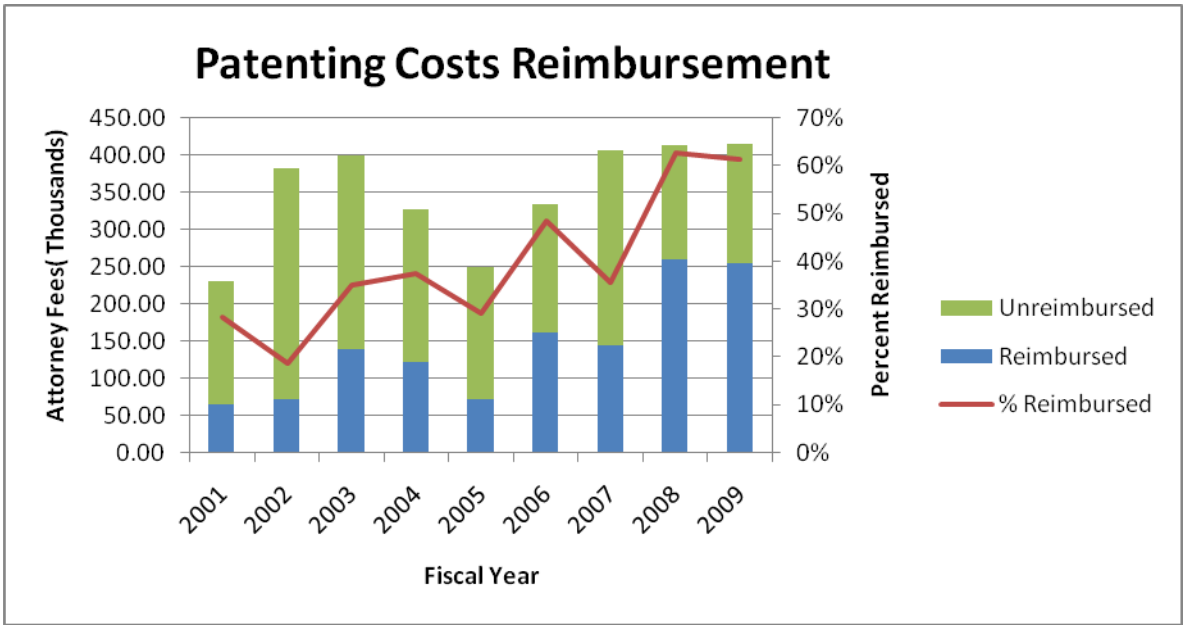
Is it patentable?

As can be seen from the figure below, we had a marked increase in invention disclosures,[3] the highest in the last ten years. Thus, our technology licensing officers are making the connections that we need to get inventions identified and into the pipeline that may lead to products on the shelf and jobs for our graduates. Issued patents doubled from FY2008, which is probably a sign that we (and our patent counsel) are getting somewhat better at negotiating with the current USPTO regime.

[3] Some of these forty disclosures were not suitable for patent protection, but rather destined for copyright, know-how or other protection. The Patent and Copyright Committee also declined to take assignment of four disclosures.



We once again kept our patent prosecution costs in line with our income. As shown below, licensees reimbursed more than 60% of our patenting costs this year, approximately the same percentage as last year. Also, our patenting costs seem to have reached a plateau between $400,000 and $425,000 for the last three years. We cannot perceive any real trend in filings, issued patents or several other data sets. One reason may be that our funding continues to be well below the target level of 1% of the University's research expenditures (or about $1M). With such limited resources, it has been difficult to consistently expand the innovation pipeline.



To identify inventions that are not readily patentable, we have begun to focus on early evaluation of our inventions, both in terms of patentability and marketability. We commissioned more formal patentability searches and filed more Patent Cooperation Treaty applications to obtain an earlier look at patentability. We also spent more time doing in-house prior art searches (even before accepting an invention disclosure) and educating our inventors on the importance of a thorough literature review, or indeed any literature review. This type of early evaluation results in a better patent application which is more focused on patentable aspects of the invention (and sometimes results in deciding not to pursue patent rights at all).

We continue to keep a close eye on Patent Office trends, court cases, and congressional activity. As seen in the accompanying graph, the patent allowance rate has plummeted over the last eight years, and shows no sign of abating. (The USPTO reported the allowance rate was 41% mid-year.) While the allowance rate declines, the pendency of patent applications has skyrocketed. The average time to first office action is now 26.9 months (up from 25.6 months six months earlier). We are appealing more often, and authorizing more attorney interviews.

Can we find an interested company?

We work to balance our marketing efforts among many potentially high-return inventions, with the intent that we properly and timely market all our inventions. Thus, like our early patentability searches, our team has focused on marketing earlier in the process. Testing the waters as to whether an invention has a ready market makes it easier to decide whether or how much to spend on a patent application. Moreover, the Arkansas Innovation Marketplace process meant that we spent some time with our older technologies and critically evaluate why they haven't been licensed.

This year, we partnered with Arkansas Manufacturing Solutions (a program of the Arkansas Science and Technology Authority) to participate in the state-funded Arkansas Innovation Marketplace (AIM). AIM is designed to connect Arkansas inventors with potential investors, distributors, and manufacturers. We submitted nineteen innovations to AIM (and decided against submitting many more), which are now available for others to consider licensing. In addition, the AIM process provides a series of tests to predict commercial success of the innovations. While we have not yet had any solid leads come from the AIM process, we have benefited from formally evaluating all our unlicensed inventions, and from building a stronger relationship with Arkansas Manufacturing Solutions.

Although we always think about whether an invention would be suitable for an Arkansas-based company, when appropriate, we license technologies to larger companies or out-of-state companies. Thus, we signed non-exclusive licenses with two large poultry breeders for techniques for determining ascites resistance. We licensed a fescue endophyte which does not appear to cause fescue toxicosis to a seed company in Oregon. We also facilitated at least three small fruit licenses for Dr. John Clark. In an interesting change of pace, we negotiated a book contract for two Extension specialists. Look for *The Marriage Garden* to be published by Jossey-Bass Publishers soon. We also signed an option with a major starch processor to evaluate certain starch technologies.

Our in-state licensing efforts featured one start-up company which is working to commercialize an avian influenza vaccine. We also licensed technologies to two existing Arkansas start-up companies, and renegotiated a license with a company that acquired an Arkansas start-up (and persuaded it to stay in state for the next phase of its commercial development).

We also participated in several external marketing or educational endeavors. We presented at the Agricultural Ed Workshop and INBRE, were an Affiliate Sponsor for the Agricultural Innovation Showcase, St Louis, MO, and are active in the Southeast AR Biofuels /Green Valley Network.

To support our search for Arkansas-based companies, we established and streamlined the optioning process for Walton College MBA teams seeking technologies to use in business plan competitions. We executed three such options this year. All three teams are continuing to seek commercial opportunities, and two teams did extraordinarily well in competitions.

Ground Up Biosolutions took first place in the Wal-Mart Better Living Business Plan Competition in April, was a semifinalist in the Carnegie-Mellon University McGinnis Venture Competition, and came in second place in the lightning round and in the trade show competition at the University of Oregon New Venture Championship. Ground Up has licensed university technology that creates a low-cost, environmentally friendly fertilizer from farms' and municipalities' byproducts. The team included three managerial M.B.A. students and a student pursuing a doctoral degree in poultry science and a master's degree in agribusiness.

Silicon Solar Solutions tied for third place at the University of San Francisco International Business Plan Competition and took first place in Challenge Round, Flight 6 and fourth place in the elevator pitch at the Rice University Business Plan Competition. This company licensed several university technologies that could improve the conversion efficiencies of solar panels by 15 percent or more. The team included two managerial M.B.A. students and a microelectronics-photonics doctoral student.

The third team, Ultra-V, is seeking to commercialize a method of manufacturing conjugated linoleic acid. We are cautiously optimistic that all three companies will negotiate licenses with the University and commercialize these inventions.

How can we help an interested company stay interested?

As our start-up companies continue to work away, we continue to work with them. For instance, we facilitated obtaining significant sponsored research (more than $250,000) for our university scientists to do follow-on development of an avian influenza vaccine. Similarly, we worked with several companies to renegotiate terms of existing licenses and to add additional technologies to their licenses.

Despite the present economic turmoil, five Arkansas-based companies reported commercial sales (down from seven last year), including one who paid past-due royalties owed for several years. One Arkansas-based licensee had a successful buy-out, and one Arkansas-based licensee was formed. In all, ten companies reported commercial sales, and ten companies reimbursed patent costs.

In addition, we are helping our innovators tap into the state resources available to bolster commercialization efforts. This year, we:

- secured $30K from Innovate Arkansas to fund TLO licensee patenting costs;
- helped secure $200K from ASTA for Silicon Solar Solutions development;
- helped secure $45K from ASTA for soy pectin pilot plant development;
- worked continuously with agencies across the state to bolster commercialization efforts; and
- helped secure more than $250K from ASTA for avian influenza vaccine research.

In FY2010, our engineering undergraduate student intern will work with us to develop a handbook to identify resources available for a would-be start up.

What are we doing for the University of Arkansas?

Chancellor Gearhart has emphasized that the vision of the University of Arkansas is to be "a flagship university for the integration of student engagement, scholarship and research, and innovation that collectively transforms lives and inspires leadership for a global society." The university accomplishes this by putting students first. The Chancellor has also identified as a goal for the university that we:

> *Marshal the university's expertise, programs, faculty, staff and students to grow the state's knowledge-based economy and to address major issues confronting Arkansas and the world.*

This last year, we increased our involvement with students, both in the classroom and in the real world. Specifically, we had two law students and an MBA student intern with us. The law students assisted in updating our records to ensure that we are in better compliance with patent regulations, and the MBA student did some client development and played an important part in preparing our technologies for the Arkansas Innovation Marketplace. An engineering

undergraduate will complete a handbook identifying the resources and opportunities available to start-ups in FY2010.

We participated in several classes, providing guest lectures and judging mock business plan competitions. Further, we created a technology commercialization course for the Walton College (which we will combine next year with Research Commercialization, as a second course). Also, one of our officers taught an undergraduate entrepreneurship class to 56 students. We continued our education efforts, making nearly a dozen presentations in a variety of venues, from meetings with department heads and experiment station scientists to capstone classes and new faculty seminars. We contacted more than 200 people through these presentations. We look forward to continuing these relationships.

The Chancellor has identified as a key measurable objective increasing the number of companies in the Arkansas Research and Technology Park from 31 (FY2008) to 50 (FY2015), with a concomitant increase in subcontracts back to the university. It seems clear to our office that technology transfer from the university to these companies will play a key role in accomplishing this aggressive growth.

In addition, we are facilitating the professional development of many faculty and students by regular lecturing, advising, and other interactions.

We continue to address legacy issues. Our law student interns reviewed licenses and files for us to ensure that information has been properly disclosed to the Patent Office. We reviewed many of our older technologies while preparing to submit inventions to the Arkansas Innovation Marketplace, and determined that some of them were no longer suitable for the university to pursue.

Dr. Childs attended a continuing legal education course on contract drafting, and has begun to implement the suggested style changes throughout our office's standard agreements. In view of our growing office and limited office budget, we agreed to forego sending one or two to the national meeting Association for University Technology Managers Regional (in Orlando, Florida) and instead attend the regional AUTM meeting (in Madison, Wisconsin) as a team. This meeting will occur in early FY2010. We look forward to building relationships with other technology licensing offices in the nation's midsection.

We are moving to a new information management system in FY2010, and have spent the last few months of FY2009 to prepare for the move. We are excited about the opportunity to use an information management system that is designed specifically for a university technology licensing office.

We recognized approximately $56,000 in revenues in excess of our unreimbursed patenting costs (sufficient to support the better part of a technology licensing officer's salary).

We had gross royalty income of $380K.[4] $60K in additional income came from options, license signing fees and milestones. Inventors received $16K, and the UA system received $115K, pursuant to UA Board of Trustees Policy 210.1. 95% of our license income came from Division of Agriculture, and more than 80% of that came from three licenses. (One of the license payments was to settle past-due royalty payments over the course of several years, and is not likely to be as high in the near future.) Additional revenue came in the form of one-time only payments for non-exclusive licenses. Patent cost reimbursement was less skewed, with 56% of the patent cost reimbursement coming from companies licensing campus technology, and 44% licensing Division of Agriculture technology, which is an indicator of where the licensing revenue may come from in the future. (Similarly, more than 70% of our patent cost reimbursement comes from in-state companies.)

Research Services

Both the Glass and Machine Shops served a variety of departments and students. These shops provided services to seventeen UA departments, four universities (in addition to UA) and five private businesses during FY09. Both shops are experiencing significant requests for instructing students, on a one-to-one basis, in the use of various, common machines, *e.g.*, drill presses and polishers, available in the shops. No charge is made for instruction of students.

Machine Shop

Highlights of Dennis Rogers' efforts include the following projects:

- Dr. Andrew Wang, Electrical Engineering: assist with the design and construction of precision, adjustable frames to control spacing on powerful magnets used to separate nanoparticles.
- Dr. Mantooth, Electrical Engineering: fabricate steel framed safety shields with transparent Lexan to protect workers from high voltage while allowing visibility.
- Civil Engineering Students: fabricate a bridge for entry in the A.S.C.E Steel Bridge and Concrete competition.
- Facilities Management: rebuild large pump shaft for an air conditioning system to quickly restore service to a very old system with hard to obtain parts; various repairs for central building management and items in campus zones A, D, and F.

Glassblowing Services

Highlights of John Pace's efforts include the following projects:

- Dr. Zheng, Chemistry & Biochemstry: assist in the design and creation of multiple high vacuum manifold systems required by Dr. Zheng needed to initiate his UA research program.

[4] A single license (from the Division of Agriculture) generated nearly half the gross royalty income (45%).

- Dr. Beitle, Chemical Engineering: repair large diameter fermentation chambers for a protein purification system.
- Dr. Koeppe, Chemistry & Biochemistry: create hundreds of specialized small cuvettes with lids for the laboratory.
- Dr. Vishal Jain, Food Science: make a high pressure cyclone reaction vessel for UV light saturation of cooking oil samples.

Revenues Generated in FY09

In addition to services provided gratis to faculty and students who need advice or general assistance, these two units provide services to both external and internal clients at an hourly rate (labor) plus associated shipping and materials charges. The Glass Shop saw a decrease in revenues of 23% and the Machine Shop showed an increase in revenues of 9%. Overall there was unit decrease of 11% in total recharge/billing to clients from FY08.

Shop	Jobs	Shipping and Materials	Labor	Total Income	Change from FY08
Glass Shop	93	$4,483	$8,445	$12,928	-23%
Machine Shop	63	$3,391	$7,325	$10,716	9%
Total	156	$7,874	$15,770	$23,644	-11%

Central Laboratory Animal Facility

The Central Laboratory Animal Facility (CLAF), an area of approximately 9000 sq. ft. located in the basement of the "A" wing of the Agriculture, Food, and Life Sciences Building (AFLS), has been in operation since early 2000. During Fiscal Year 2009 (FY09), of the thirteen rooms that can potentially house animals (primarily commonly used small rodents and rabbits), six were in continuous use, with one additional room used for experimental procedures (exercise training on a treadmill). Two rooms were occupied intermittently. There were seven investigators who were the primary users during FY09, three of whom use mice and four of whom use rats. The investigators were charged a per diem rate for the care of their animals. A total of $34,617 in per diem charges was collected for the FY09 accounting period. Income from the CLAF users increased dramatically (somewhat over 150%) due to the fact that new investigators are using the facility and several long-term rat studies, using relatively large numbers of animals, are being conducted. The facility continues to cover direct costs (feed, bedding, cage-cleaning chemicals, supplies, routine maintenance costs) as a result of the per diem charges to facility users. Aging equipment requires significantly more maintenance than in past years and a significant number of new rat cages and racks to hold them were purchased to accommodate the dramatic increase in studies initiated and conducted during FY09. Thus, there was a deficit of $3,089 when direct costs of facility operation were compared to income actually collected. It should be noted that

the cost of the cages and racks is a one-time expenditure that increased the capacity of the CLAF to accommodate a significant number of rats, a species that had rarely been used prior to this reporting period.

Graduate School

The Graduate School Vision Statement, Mission Statement, Core Values and Goals have not changed from the last annual report, and may be found on our website at grad.uark.edu.

Significant Achievements and Changes

There were several achievements and changes in the Graduate School during the 2008-09 year:

- We hosted 17 students from eight institutions for the summer 2009 George Washington Carver program and increased the number of Carver institutions to 27 with the addition of Claflin University (South Carolina) and Grambling State University (Louisiana);
- We coordinated a meeting between the Bush/Clinton Fulbright Tsunami Relief Program sponsored students with former President George H.W. Bush during his visit to the campus in April;
- We presented the Graduate Research Opportunities Forum for faculty and administrators from selected HBCUs and HSIs;
- We successfully proposed a new graduate certificate program in Preparing for the Professoriate to begin in the Fall 2009, and continued to offer one course each semester, in Fall 2008 and Spring 2009, for the program;
- The Teaching Assistant Effectiveness Advisory Committee of the Graduate Council, led by Diane Cook, offered four workshops for teaching assistants and hosted a luncheon for TA supervisors;
- Diane Cook gave an hour-long presentation at the annual conference of the National Association of Graduate Admissions Professionals on "Graduate Student Orientation: How to Provide the Most Value to Students on a Limited Budget;"
- We offered a series of lunch presentations in the Spring 2009 semester for graduate students. Besides a "Discussion with the Dean" with the Associate Dean, where students could ask any question they wanted, we offered a presentation by a faculty member on a topic of interest;
- Vicky Hartwell and Patricia Koski presented to the University of Arkansas chapter of the Association for Women in Science;
- We again co-hosted, with the Career Services Center, the "Abstract to Contract" student research paper competition. Nearly 30 students presented at this year's event;
- We continued efforts related to the Doctoral Completion project, in conjunction with the Council of Graduate Schools; in particular we hosted a working luncheon of 56 graduate faculty and doctoral students who discussed, in a roundtable setting, various topics related to doctoral student retention and completion. Diane Cook created a reference document from this meeting that was distributed to the group;
- Diane Cook planned and the Graduate Dean's Student Advisory Board hosted the graduate student family picnic, held for the second time in the early fall semester of 2008;

- Staff changes were:
  - ✓ Leslie Henslee left our office and was replaced by Tracy Joslin as Director of the ISIS project
  - ✓ LeAnn Suggs replaced Tracy Joslin as the Assistant Director of the ISIS project
  - ✓ Latricia Shoals left the office and Reynelda Augustine replaced her as the support staff for the Public Policy program
  - ✓ Jeremy Turner left the office and Michael Rau replaced him as the office manager
  - ✓ Erica Yeung replaced Michael Rau as support staff in the Office of the Vice Provost for Research
  - ✓ Lia Huddleston left the office and was replaced by Dylan Presley as one of our graduate recruiters
  - ✓ Mike Miller moved into a newly-created position in our scanning unit and was replaced by Alisa Casper
  - ✓ Lindsey Conaway also moved into the new scanning unit and was replaced by Laura Glass
- Dr. Larry Roe and Dr. Richard Ulrich took over duties as the Director of the Space Center, and the graduate coordinator of the Space & Planetary Sciences degree programs, respectively, replacing Derek Sears and Hazel Sears.

Progress and Accomplishments

Applications, Admissions, and Recruitment

Please see the separate annual reports for the Office of Graduate and International Recruitment and Admissions, the George Washington Carver Research Program, and the Director of Graduate Student Activities.

Enrollment and Graduation

The Graduate School has the following goals:

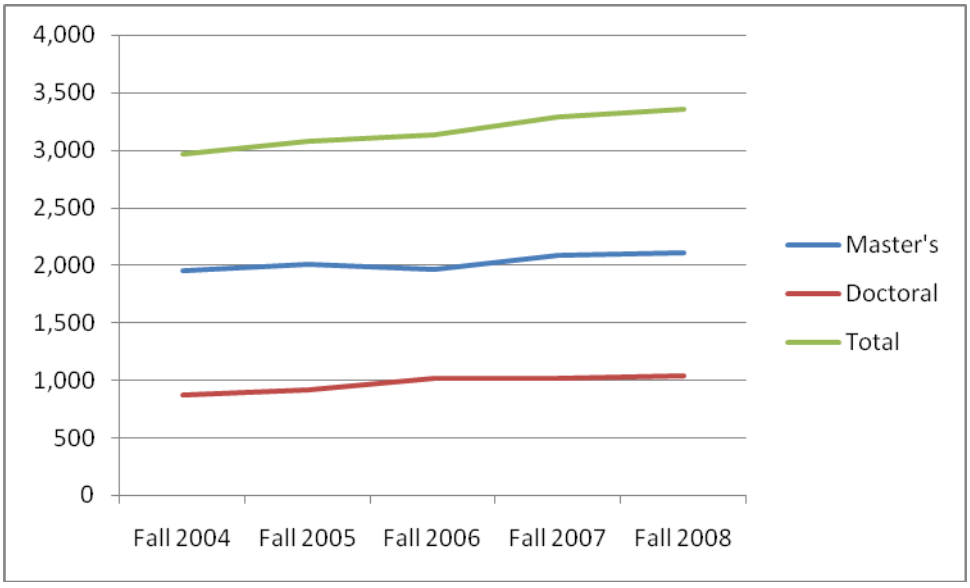
- ✓ Increase over-all graduate enrollment each year
- ✓ Increase doctoral enrollment each year
- ✓ Increase graduate enrollment each year among underrepresented minorities, and at least reach an enrollment and graduation rate that mirrors the population of the State who are eligible to enter graduate programs (i.e. those who hold at least a baccalaureate degree). Our target enrollment and graduation rates are: African American, 8.0%; Asian American, 1.4%, Hispanic American, 1.0%; and Native American/Alaskan Native, 0.5%
- ✓ Maintain diversity in graduate enrollment by gender and nationality
- ✓ Increase graduate degree production each year
- ✓ Increase the degree production of underrepresented minorities (see goals above)
- ✓ Maintain diversity in degree production by gender and nationality

Enrollment

Graduate School enrollment, by level, is given in Table 1, master's and doctoral enrollment, by race/ethnicity, are given in Tables 2 and 3; master's and doctoral enrollment by gender are given in Tables 4 and 5; and master's and doctoral enrollment by nationality are given in Tables 6 and 7. (Tables may be found in the Appendix to this section.)

Total graduate enrollment increased steadily from Fall 2004 to Fall 2008, in absolute numbers (See Figure 1, below), but the percentage of the total University enrollment fell slightly in Fall 2008 (from 18% in Fall 2007 to 17% in Fall 2008). Master's and doctoral enrollment generally increased each year, although each saw one year of decreased enrollments (Fall 2006 for master's programs and Fall 2007 for doctoral programs). See Table 1 in the Appendix.

Figure 1: Graduate Enrollment Trends, 2004-2008



Note: Total enrollment includes master's, doctoral, specialist, graduate certificate and non-degree students.

In master's programs, we have met our goal of enrolling at least 8% African American students every year since Fall 2004. Our most recent enrollment, in Fall 2008, saw a slight decrease in African-American master's enrollment compared to Fall 2007, but it remained above 8%. We have met our goals of a minimum 1.4% Asian American, 1.0% Hispanic American, and 0.5% Native American/Alaskan Native in master's programs in every year. See Table 2.

In doctoral enrollment, we have come close to 8% African American (7.39% in Fall 2008 and 7.91% in Fall 2007) but have not quite reached it. With the exception of Fall 2006, we have met our goal of enrolling 1.4% Asian Americans each year. We have at least doubled our goal of 1% Hispanic enrollment, and far exceeded our enrollment goal of .5% Native Americans in every

year. See Table 3.

Between Fall 2007 and Fall 2008, the percentage of men in master's programs stayed virtually the same (49%), while in the same time period, the percentage of women in doctoral programs increased from 46% to 48%. See Tables 4 and 5.

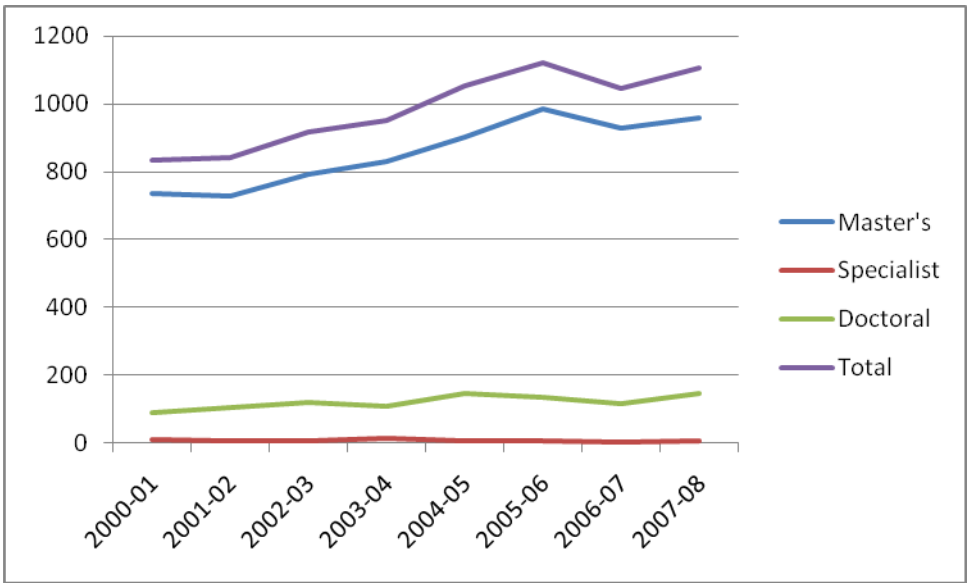
While enrollment of international students in master's programs slipped in Fall 2008 to 13%, lower than in previous years, international enrollment in doctoral programs was higher in Fall 2008 than in any year shown except Fall 2006. See Tables 6 and 7.

Graduation

Degrees awarded are given in Table 8; master's and doctoral degrees awarded by race/ethnicity are given in Tables 9 and 10; master's and doctoral degrees awarded by gender are given in Tables 11 and 12; master's and doctoral degrees awarded by nationality are given in Tables 13 and 14. Note: The 2007/08 graduation year is the most recent for which we have official data.

Over-all degree production of master's, specialist, and doctoral students increased in 2007/08, compared to the previous year, as did every category (master's, specialist, doctoral). See Figure 2, below. The increase in doctoral production was significant – from 115 in 2006/07 to 144 in 2007/08. However, over-all degree production in 2007/08 was less than in 2005/06, as were the number of master's degrees awarded.

Figure 2: Degrees Conferred, 2000/01-2007/08



In 2007/08, compared to the previous year, more master's degrees were awarded to Native Americans, Asian Americans, and Hispanic Americans, in absolute numbers and as a percentage

of the total number of master's degrees awarded to domestic students. In the same time period, three fewer master's degrees were awarded to African American students and two fewer were awarded to Caucasian students. In 2007/08, we met our goal of 8% African American master's degree production, 1.4% Asian American master's degree production, 1% Hispanic American master's degree production, and .05% Native American master's degree production. See Table 9.

Compared to 2006/07, one more Native American and four more African Americans received doctoral degrees in 2007/08. No Asian Americans and equal numbers of Hispanic Americans (three in each year) received doctoral degrees in 2007/08 compared to 2006/07. In the 2007/08 graduation year, we exceeded our goal of a minimum 8% doctoral graduation of African Americans for the first time since 2005/06. We also met our graduation goals for Native Americans and Hispanic Americans, but not for Asian Americans. In fact, no Asian Americans received doctoral degrees in either 2007/08 or 2006/07. See Table 10.

In 2007/08, compared to 2006/07, more women received master's degrees and for the first time since 2004/05, exceeded the number of master's degrees awarded to men. (See Table 11.) With regard to doctoral degrees, in 2007/08, women received the largest percentage (44%) awarded to women since 2001/02 (45%) when fewer total doctoral degrees were awarded. As a result, the percentage of doctoral degrees awarded to men and women moved closer to equal in 2007/08. (See Table 12.)

In 2007/08, compared to 2006/07, more international students received master's degrees (148 compared to 130) and doctoral degrees (46 compared to 38), although the percentage of total doctoral degrees awarded to international students fell in 2007/08 (32% compared to 33% in 2006/07). See Tables 13 and 14.

Graduate Assistantships, Fellowships and Travel Grants

During the fiscal year 2009, there were 36 distinguished doctoral fellows (DDF) and 179 doctoral academy fellows (DAF), with eight new students accepting the DDF fellowship in Fall 2008. Four new SREB scholars entered the University in fiscal year 2009, bringing our total to 13. The Benjamin Franklin Lever Tuition Fellowship was awarded to 54 students, 30 new recipients and 24 continuing. With regard to travel grants, 541 grants allowed students to attend conferences in 37 states and the District of Columbia, as well as international conferences around the globe. For more detailed information, please see the report from Vicky Hartwell.

On-going, Yearly, and Traditional Activities

In 2008-09, we continued organizing and/or financing these on-going special events:

- ✓ *Graduate Student Professional Learning Series*, Fall 2008;
- ✓ Spring 2009 luncheon seminars for graduate students described earlier;
- ✓ The August workshop for graduate assistants presented by the Teaching and Faculty

Support Center;
- ✓ The annual New Graduate Student Orientation held in August;
- ✓ Monthly meetings of the Graduate Dean's Student Advisory Board;
- ✓ Training for new graduate coordinators;
- ✓ Support for the Black Graduate Students Association;
- ✓ Lunch meetings for SREB scholars in each of the fall and spring semesters.
- ✓ A meeting with the Distinguished Doctoral Fellows and the Doctoral Academy Fellowship recipients in the early Spring 2009.

In addition, we continued these routine activities:

- o Administering the Distinguished Doctoral Fellowship, Doctoral Academy Fellowship, and Graduate Fellowship for the Master of Fine Arts programs;
- o Administering the Benjamin Franklin Lever Tuition Fellowship program;
- o Administering the Southern Regional Education Board Fellowship program on our campus;
- o Administering the Graduate Student Travel Grant program;
- o Managing the periodic review of all degree programs (see the Annual Report from the Director of the Office of Program Assessment);
- o Managing the Teaching Assistant Effectiveness Advisory Committee of the Graduate Council;
- o Managing the Academic Appeals Subcommittee of the Graduate Council;
- o Organizing, chairing and serving on the Graduate Council; creating the Council agenda and minutes; posting the agenda and minutes to the web; publicizing the activities of the Council;
- o Serving on the University Recruitment & Retention Committee;
- o Managing the functional aspects of ISIS; trouble shooting for ISIS issues;
- o Processing all out-of-career registrations for undergraduate and graduate students;
- o Co-coordinating the All-University Commencement ceremony; and organizing all of the aspects of commencement that specifically pertain to graduate students;
- o Serving on the Registration and Course Scheduling Coordinating Committee (RACSCCLs);
- o Over-seeing the application for and approval of graduate faculty status;
- o Preparing all of the material for the University Course and Programs Committee; preparing and posting the agenda and the minutes for the Committee;
- o Editing the *Graduate School Catalog*;
- o Preparing several reports (e.g. Peterson's Guide; GRE; NSF);
- o Serving as a member of the Staff Senate;
- o Serving as an *ex officio* member of the Faculty Senate, and reporting Graduate Council and University Course and Program Committee business to the Senate;
- o Processing and monitoring the admissions, academic progress, committee assignments, change of majors, and degree completions of all graduate students;
- o Processing and monitoring the tuition payments for all students on graduate assistantships or fellowships;

- Serving on the professional board and the users board of the Survey Research Center;
- Serving on the Campus Council;
- Serving on the Disability Committee;
- Serving on the English as a Second Language Committee;
- Creating the course schedules for the seven interdisciplinary degree programs and the one interdisciplinary graduate certificate program; monitoring and making changes to the schedules;
- Organizing the work of graduate student grievance committees;
- Participating in the orientation for international students;
- Organizing monthly meetings of the interdisciplinary program directors;
- Organizing regular meetings of the Preparing for the Professoriate Committee;
- Organizing a team for the Susan G. Komen race;
- Sponsoring tables at the annual Martin Luther King recommitment banquet;
- Monitoring the Bush/Clinton Fulbright Tsunami Relief Initiative students; and
- Serving on a wide variety of other committees and initiatives.

Ms. Kendra Smith once again took the leadership role in this year's Carver Project. This summer we hosted 17 students from eight institutions (Claflin University, Fort Valley State University, Grambling State University, Huston-Tillotson University, Philander Smith College, University of Arkansas, University of Arkansas, Pine Bluff, and University of Texas, El Paso).

Associate Dean Koski attended the annual meetings of the Council of Graduate Schools, the national professional association, in Washington, DC. Associate Dean Koski and Ms. Lynn Mosesso, Director of the Office of Graduate and International Recruitment and Admissions, attended the annual meetings of the Conference of Southern Graduate Schools, in Norfolk, Virginia.

Interdisciplinary Programs

There are seven interdisciplinary degree programs and one graduate certificate program which report directly to the Graduate School: The M.S. and Ph.D. in Cell and Molecular Biology; the M.S. and Ph.D. in Microelectronics-Photonics; the Ph.D. in Public Policy; the M.S. and Ph.D. in Space and Planetary Sciences, and the graduate certificate in Gerontology. (Note: Beginning in Fall 2009, there will be one additional certificate program, Preparing for the Professoriate.) Table 15 shows the enrollment in each of the degree programs from Fall 2001 to Fall 2008; Table 16 shows the enrollment by race/ethnicity, Table 17 shows the enrollment by gender, and Table 18 shows the enrollment by nationality.

In Cell and Molecular Biology, the master's enrollment has been variable across the years, while the doctoral enrollment has steadily increased. In Public Policy, an enrollment limit in the lower 60s was reached in Fall 2004 and has held steady in that range ever since. Space and Planetary Sciences had its largest enrollment of doctoral students in Fall 2008 but has had no or only one master's student each year since its inception.

Of these programs, Public Policy is the most diverse in terms of racial/ethnic category, and indeed is the most diverse Ph.D. program on campus (See Table 16). Of its domestic students,

this program enrolls two-thirds Caucasian students and the rest are racially or ethnically diverse. Public Policy also enrolls more women than men, as do the M.S. and Ph.D. programs in Cell and Molecular Biology. (See Table 17). Cell and Molecular Biology also enrolls the most international students – 67% in the master's program and 68% in the Ph.D. program. The next largest is Microelectronics-Photonics. (See Table 18).

Collectively, these cross-college interdisciplinary programs produced 2.09% of the total master's graduates in 2007-08 and 11% of the doctoral graduates. If we add Environmental Dynamics Ph.D. production to the total of the cross-college interdisciplinary programs, these programs produced 15% of the total doctoral awards in 2007/08. Since 2000/01, these programs (including ENDY) have produced nearly 11% of the total doctoral degrees. See Tables 18, 19, 20, and 21.

One-time, Beginning, or Ending Activities

During 2008-09, we:

- Began Fall and Spring Prospective Graduate Student Open Houses;
- Began the Graduate Research Opportunities Forum;
- Selected the inaugural group of Graduate Student Ambassadors;
- Implemented history scanning of admissions files;
- Implemented graduation recognition programs honoring our sponsored students;
- Coordinated a meeting between the Bush/Clinton Fulbright Tsunami Relief Program sponsored students with former President George H.W. Bush during his visit to the campus in April

Actions by the Graduate Council

In 2008-09, the Graduate Council approved 25 program changes, five policy changes, nine program deletions, one new graduate certificate program (Preparing for the Professoriate), one new master's program (Athletic Training), and created the Academic Appeals Subcommittee. The Council also routinely reviewed graduate and dual credit course changes sent forward from the University Course and Programs Committee, and considered graduate faculty applications.

Appendix - Tables

Table 1: Graduate Enrollment, in Frequencies and Percentages of Total University Enrollment, Fall 2004-Fall 2008

	Master's	Specialist	Doctoral	Grad Cert	Non-Degree	Total	% Change	Total Univ	% Univ
Fall 2008	2,108	27	1,043	13	165	3,356	2.10%	19,194	17.48%
# Change						69			
Fall 2007	2,081	29	1,017	5	155	3,287	4.82%	18,648	17.63%
# Change						151			
Fall 2006	1,967	18	1,026	1	124	3,136	1.69%	17,926	17.49%
# Change						52			
Fall 2005	2,007	10	922	2	143	3,084	3.87%	17,821	17.31%
# Change						115			
Fall 2004	1,954	16	877	1	121	2,969	3.88%	17,269	17.19%
# Change						111			

Table 2: Master's Enrollment, by Race/Ethnicity, in Frequencies and Percentages of Total Domestic Master's Enrollment, Fall 2004-Fall 2008

	African American	Asian American	Hispanic American	Native American	White	Unknown	Total
Fall 2008	156	42	52	27	1,526	30	1,833
	8.51%	2.29%	2.84%	1.47%	83.25%	1.64%	
Fall 2007	173	33	51	33	1,461	43	1,794
	9.64%	1.84%	2.84%	1.84%	81.44%	2.40%	
Fall 2006	156	38	37	23	1,379	38	1,671
	9.34%	2.27%	2.21%	1.38%	82.53%	2.27%	
Fall 2005	144	36	35	17	1,389	59	1,680
	8.57%	2.14%	2.08%	1.01%	82.68%	3.51%	
Fall 2004	129	34	30	29	1,358	34	1,614
	7.99%	2.11%	1.86%	1.80%	84.14%	2.11%	

Table 3: Doctoral Enrollment, by Race/Ethnicity, in Frequencies and Percentages of Total Domestic Doctoral Enrollment, Fall 2004-Fall 2008

Doctoral	African American	Asian American	Hispanic American	Native American	White	Unknown	Total
Fall 2008	55	14	15	17	619	24	744
	7.39%	1.88%	2.02%	2.28%	83.20%	3.23%	
Fall 2007	58	11	16	16	602	30	733
	7.91%	1.50%	2.18%	2.18%	82.13%	4.09%	
Fall 2006	41	7	19	13	608	33	721
	5.69%	0.97%	2.64%	1.80%	84.33%	4.58%	
Fall 2005	41	9	20	12	551	30	663
	6.18%	1.36%	3.02%	1.81%	83.11%	4.52%	
Fall 2004	40	11	16	13	546	5	631
	6.34%	1.74%	2.54%	2.06%	86.53%	0.79%	

Table 4: Master's Enrollment by Gender, in Frequencies and Percentages of Total Master's Enrollment, Fall 2004-Fall 2008

	Male	Female	Total
Fall 2008	1,035	1,073	2,108
	49.10%	50.90%	
Fall 2007	1,019	1,062	2,081
	48.97%	51.03%	
Fall 2006	970	997	1,967
	49.31%	50.69%	
Fall 2005	991	1,016	2,007
	49.38%	50.62%	
Fall 2004	946	1,008	1,954
	48.41%	51.59%	

Table 5: Doctoral Enrollment by Gender, in Frequencies and and Percentages of Total Doctoral Enrollment, Fall 2004-Fall 2008

	Male	Female	Total
Fall 2008	542	501	1,043
	51.97%	48.03%	
Fall 2007	545	472	1,017
	53.59%	46.41%	
Fall 2006	565	461	1,026
	55.07%	44.93%	
Fall 2005	509	413	922
	55.21%	44.79%	
Fall 2004	490	387	877
	55.87%	44.13%	

Table 6: Master's Enrollment by Nationality, in Frequencies and Percentages of Total Master's Enrollment, Fall 2004-Fall 2008

	Domestic	International	Total
Fall 2008	1,833	275	2,108
	86.95%	13.05%	
Fall 2007	1,794	287	2,081
	86.21%	13.79%	
Fall 2006	1,671	296	1,967
	84.95%	15.05%	
Fall 2005	1,680	327	2,007
	83.71%	16.29%	
Fall 2004	1,614	340	1,954
	82.60%	17.40%	

Table 7: Doctoral Enrollment by Nationality, in Frequencies and Percentages of Total Doctoral Enrollment, Fall 2004-Fall 2008

	Domestic	International	Total
Fall 2008	744	299	1,043
	71.33%	28.67%	
Fall 2007	733	284	1,017
	72.07%	27.93%	
Fall 2006	721	305	1,026
	70.27%	29.73%	
Fall 2005	663	259	922
	71.91%	28.09%	
Fall 2004	631	246	877
	71.95%	28.05%	

Table 8: Graduate Degrees Awarded, in Frequencies and Percentages of Total Graduate Degrees, 2000/01-2007/08

	Master's	Specialist	Doctoral	Total
2007-08	959	4	144	1,107
	86.63%	0.36%	13.01%	
2006-07	929	1	115	1,045
	88.90%	0.10%	11.00%	
2005-06	985	3	134	1,122
	87.79%	0.27%	11.94%	
2004-05	904	3	145	1,052
	85.93%	0.29%	13.78%	
2003-04	831	12	110	953
	87.20%	1.26%	11.54%	
2002-03	793	4	120	917
	86.48%	0.44%	13.09%	
2001-02	729	5	106	840
	86.79%	0.60%	12.62%	
2000-01	735	9	90	834
	88.13%	1.08%	10.79%	

Table 9: Master's Degrees Awarded, by Race/Ethnicity, in Frequencies and Percentages of Total Domestic Degrees, 2000/01-2007/08

		Native American	African American	Asian American	Hispanic American	White	Unknown	Total Domestic
2007-08	n	10	67	20	26	680	12	815
	% Dom	1.23%	8.22%	2.45%	3.19%	83.44%	1.47%	
2006-07	n	9	70	19	19	682	10	809
	% Dom	1.11%	8.65%	2.35%	2.35%	84.30%	1.24%	
2005-06	n	8	64	18	14	709	31	844
	% Dom	0.95%	7.58%	2.13%	1.66%	84.00%	3.67%	
2004-05	n	11	78	21	15	634	51	810
	% Dom	1.36%	9.63%	2.59%	1.85%	78.27%	6.30%	
2003-04	n	9	60	18	17	583	5	692
	% Dom	1.30%	8.67%	2.60%	2.46%	84.25%	0.72%	
2002-03	n	12	68	19	15	555	2	671
	% Dom	1.79%	10.13%	2.83%	2.24%	82.71%	0.30%	
2001-02	n	9	70	16	8	517	3	623
	% Dom	1.44%	11.24%	2.57%	1.28%	82.99%	0.48%	
2000-01	n	17	43	19	15	540	0	634
	% Dom	2.68%	6.78%	3.00%	2.37%	85.17%	0.00%	

Table 10: Doctoral Degrees Awarded, by Race/Ethnicity, in Frequencies and Percentages of Total Domestic Doctoral Degrees 2000/01 - 2007/08

		Native American	African American	Asian American	Hispanic American	White	Unknown	Total Domestic
2007-08	n	1	9	0	3	81	4	98
	% Dom	1.02%	9.18%	0.00%	3.06%	82.65%	4.08%	
2006-07	n	0	5	0	3	63	6	77
	% Dom	0.00%	6.49%	0.00%	3.90%	81.82%	7.79%	
2005-06	n	0	9	2	3	79	1	94
	% Dom	0.00%	9.57%	2.13%	3.19%	84.04%	1.06%	
2004-05	n	3	6	5	4	83	15	116
	% Dom	2.59%	5.17%	4.31%	3.45%	71.55%	12.93%	
2003-04	n	3	5	4	1	60	0	73
	% Dom	4.11%	6.85%	5.48%	1.37%	82.19%	0.00%	
2002-03	n	1	8	3	1	71	1	85
	% Dom	1.18%	9.41%	3.53%	1.18%	83.53%	1.18%	
2001-02	n	1	3	4	2	74	0	84
	% Dom	1.19%	3.57%	4.76%	2.38%	88.10%	0.00%	
2000-01	n	2	5	3	1	56	0	67
	% Dom	2.99%	7.46%	4.48%	1.49%	83.58%	0.00%	

Table 11: Master's Degrees Awarded, by Gender, in Frequencies and Percentages of Total Master's Degrees, 2000/01-2007/08

		Female	Male	Total
2007-08	n	484	479	963
	% Total	50.26%	49.74%	
2006-07	n	458	481	939
	% Total	48.78%	51.22%	
2005-06	n	484	503	987
	% Total	49.04%	50.96%	
2004-05	n	465	444	909
	% Total	51.16%	48.84%	
2003-04	n	414	419	833
	% Total	49.70%	50.30%	
2002-03	n	417	386	803
	% Total	51.93%	48.07%	
2001-02	n	408	328	736
	% Total	55.43%	44.57%	
2000-01	n	411	326	737
	% Total	55.77%	44.23%	

Table 12: Doctoral Degrees Awarded, by Gender, in Frequencies and Percentages of Total Doctoral Degrees, 2000/01-2007/08

		Female	Male	Total
2007-08	n	64	80	144
	% Total	44.44%	55.56%	
2006-07	n	44	71	115
	% Total	38.26%	61.74%	
2005-06	n	55	79	134
	% Total	41.04%	58.96%	
2004-05	n	60	85	145
	% Total	41.38%	58.62%	
2003-04	n	35	75	110
	% Total	31.82%	68.18%	
2002-03	n	52	68	120
	% Total	43.33%	56.67%	
2001-02	n	48	58	106
	% Total	45.28%	54.72%	
2000-01	n	47	43	90
	% Total	52.22%	47.78%	

Table 13: Master's Degrees Awarded, by Nationality, in Frequencies and Percentages of Total Master's Degrees, 2000/01-2007/08

		Domestic	Int'l	Total
2007-08	n	815	148	963
	% Total	84.63%	15.37%	
2006-07	n	809	130	939
	% Total	86.16%	13.84%	
2005-06	n	844	143	987
	% Total	85.51%	14.49%	
2004-05	n	810	99	909
	% Total	89.11%	10.89%	
2003-04	n	692	141	833
	% Total	83.07%	16.93%	
2002-03	n	671	132	803
	% Total	83.56%	16.44%	
2001-02	n	623	116	739
	% Total	84.30%	15.70%	
2000-01	n	634	103	737
	% Total	86.02%	13.98%	

Table 14: Doctoral Degrees Awarded, by Nationality, in Frequencies and Percentages of Total Doctoral Degrees, 2000/01-2007/08

		Domestic	Int'l	Total
2007-08	n	98	46	144
	% Total	68.06%	31.94%	
2006-07	n	77	38	115
	% Total	66.96%	33.04%	
2005-06	n	94	40	134
	% Total	70.15%	29.85%	
2004-05	n	116	29	145
	% Total	80.00%	20.00%	
2003-04	n	73	37	110
	% Total	66.36%	33.64%	
2002-03	n	85	35	120
	% Total	70.83%	29.17%	
2001-02	n	84	22	106
	% Total	79.25%	20.75%	
2000-01	n	67	23	90
	% Total	74.44%	25.56%	

Table 15: Enrollment in Cross-College Interdisciplinary Degree Programs, Fall 2001-2008

	CEMBMS	CEMBPH	MEPHMS	MEPHPH	PUBPPH	SPACMS	SPACPH	TOTAL
Fall 2008	3	56	24	26	64	0	21	194
Fall 2007	8	48	30	28	64	1	15	194
Fall 2006	7	45	30	28	61	0	16	187
Fall 2005	11	39	30	24	61	1	6	172
Fall 2004	20	34	26	26	63	N/A	N/A	169
Fall 2003	17	31	21	27	56	N/A	N/A	152
Fall 2002	13	15	14	23	44	N/A	N/A	109
Fall 2001	6	8	18	17	36	N/A	N/A	85

Table 16: Enrollment in Cross-College Interdisciplinary Degree Programs, by Race/Ethnicity, Fall 2008

Fall 2008	Native American	African American	Asian American	Hispanic American	White	Unknown	Total Domestic
CEMBMS	0	0	0	0	1	0	1
					100.00%		
CEMBPH	0	1	1	0	16	0	18
		5.56%	5.56%		88.89%		
MEPHMS	0	3	0	2	8	0	13
		23.08%		15.38%	61.54%		
MEPHPH	0	3	0	0	11	1	15
		20.00%			73.33%	6.67%	
PUBPPH	3	12	1	1	36	1	54
	5.56%	22.22%	1.85%	1.85%	66.67%	1.85%	
SPACMS	0	0	0	0	0	0	0
SPACPH	0	1	0	1	16	0	18
		5.56%		5.56%	88.89%		
TOTAL	3	20	2	4	88	2	119
	2.52%	16.81%	1.68%	3.36%	73.95%	1.68%	

Table 17: Enrollment in Cross-College Interdisciplinary Degree Programs, by Gender, Fall 2008

Fall 2008	Male	Female	Total
CEMBMS	0	3	3
	0.00%	100.00%	
CEMBPH	26	30	56
	46.43%	53.57%	
MEPHMS	17	7	24
	70.83%	29.17%	
MEPHPH	19	7	26
	73.08%	26.92%	
PUBPPH	26	38	64
	40.63%	59.38%	
SPACMS	0	0	0
SPACPH	13	8	21
	61.90%	38.10%	
TOTAL	101	93	194
	52.06%	47.94%	

Table 18: Enrollment in Cross-College Interdisciplinary
Fall 2008

	International	Domestic	Total
CEMBMS	2	1	3
	66.67%	33.33%	
CEMBPH	38	18	56
	67.86%	32.14%	
MEPHMS	11	13	24
	45.83%	54.17%	
MEPHPH	11	15	26
	42.31%	57.69%	
PUBPPH	10	54	64
	15.63%	84.38%	
SPACMS	0	0	0
SPACPH	3	18	21
	14.29%	85.71%	
TOTAL #	75	119	194
	38.66%	61.34%	

Table 19: Master's Degrees Awarded in Cross-College Interdisciplinary Degree Programs as a Percentage of all Master's Degrees Awarded, 2000/01-2007/08

	CEMBMS	MEPHMS	SPACMS	TOTAL	UNIV	% UNIV
2007-08	4	15	1	20	959	2.09%
2006-07	5	13	0	18	929	1.94%
2005-06	7	7	1	15	985	1.52%
2004-05	10	7	N/A	17	904	1.88%
2003-04	4	8	N/A	12	831	1.44%
2002-03	3	4	N/A	7	793	0.88%
2001-02	1	7	N/A	8	729	1.10%
2000-01	0	4	N/A	4	735	0.54%
TOTAL	30	50	1	101	6,865	1.47%

Table 20: Doctoral Degrees Awarded in Cross-College Interdisciplinary Degree Programs, as a Percentage of all Doctoral Degrees Awarded, 2000/01-2007/08

	CEMBPH	MEPHPH	PUBPPH	SPACPH	TOTAL	UNIV	% UNIV
2007-08	8	3	5	0	16	144	11.11%
2006-07	3	4	4	0	11	115	9.57%
2005-06	6	5	10	1	22	134	16.42%
2004-05	3	8	6	N/A	17	145	11.72%
2003-04	2	2	1	N/A	5	110	4.55%
2002-03	0	2	1	N/A	3	120	2.50%
2001-02	0	0	0	N/A	0	106	0.00%
2000-01	0	0	0	N/A	0	90	0.00%
TOTAL	14	21	22	1	74	964	7.68%

Table 21: Doctoral Degrees Awarded in Cross-College Interdisciplinary Degree Programs, and Environmental Dynamics, as a Percentage of all Doctoral Degrees Awarded, 2000/01-2007/08

	CEMBPH	ENDYPH	MEPHPH	PUBPPH	SPACPH	TOTAL	UNIV	% UNIV
2007-08	8	6	3	5	0	22	144	15.28%
2006-07	3	4	4	4	0	15	115	13.04%
2005-06	6	4	5	10	1	26	134	19.40%
2004-05	3	3	8	6	N/A	20	145	13.79%
2003-04	2	4	2	1	N/A	9	110	8.18%
2002-03	0	2	2	1	N/A	5	120	4.17%
2001-02	0	7	0	0	N/A	7	106	6.60%
2000-01	0	1	0	0	N/A	1	90	1.11%
TOTAL	14	25	21	22	1	105	964	10.89%

Graduate Student Activities

The goal of this office is to enhance graduate student retention and completion by providing professional and personal development programs for students.

Significant Achievements and Changes

Doctoral Completion Project With the goal of improving the time-to-degree and graduation rates of doctoral students, the Graduate School works with twelve Ph.D. programs who have volunteered to partner with the Graduate School in identifying best practices in doctoral student retention. In the fall of 2008 the Graduate School hosted a working luncheon of 56 graduate faculty and doctoral students who discussed various topics related to doctoral student completion in a roundtable setting. After the luncheon one person from each table wrote a written report of their discussion. A reference document, *Discussing Doctoral Student Retention and Completion at the University of Arkansas*, was produced from this discussion and distributed to all interested parties on the campus.

Teaching Assistant Effectiveness Advisory Committee The Graduate School created the Teaching Assistant Effectiveness Advisory Committee in 2007, to work toward increasing the preparation and effectiveness of all UA teaching assistants by supporting the departments in which the TAs are housed. This committee is comprised of faculty and graduate students representing departments with varying numbers of TAs. In the 2007/08 academic year the committee met to set goals for the short term.

During the 2008/2009 academic year this committee worked very hard and successfully presented four workshops for TAs as well as hosting a luncheon for TA supervisors in the spring.

Preparing for the Professoriate Begun in 2006, the PFP program attempts to prepare those doctoral students who will enter the academy as professors. In 2008 the certificate program in Preparing for the Professoriate was approved by the ADHE. To earn the certificate students take the two PFP core courses: *Preparing for the Professoriate: Faculty Work Beyond The Classroom*, and *Preparing for the Professoriate: Work In The Classroom* and two other elective courses which must be approved by the program director. After a student has earned the certificate, this will show on the student's transcript.

Presentation at National Conference In April, 2009 Diane Cook presented at the National Association of Graduate Admissions Professionals (NAGAP) national conference in NewYork, NY on the topic *Graduate Student Orientation: How to Provide the Most Value to Students on a Limited Budget*.

Annual ongoing activities:

From Abstract to Contract: Graduate Student Research Symposium and Career Networking Event In its second year, we increased the number of graduate students participating and found the optimum event formula for this program. A collaboration between the Graduate School and the Career Development Center, A2C consists of two separate events: 1) a research symposium

competition where graduate students present posters in a setting designed to mirror one they would encounter at a conference; and 2) a workshop presented by the Career Development Center to help prepare students to network at a conference and enter the job search.

Almost 30 students presented at this year's research competition; the goal for 2009 is to have 50 student presenters. Awards are given for first place in each of six areas of research.

Graduate Student Professional Learning Series This program, initiated in 2005, has enjoyed much success. Three programs are held in the fall and spring semesters on topics of interest to graduate students, with a heavy focus on Responsible Conduct of Research. Presentations are made by research faculty. Each presentation is concluded with a dinner for all attendees (no charge) where graduate students can discuss the presentation and its implications in their own graduate program experience.

Graduate Student Lunch Seminars In spring 2009 a series of three lunch presentations was held for graduate students on topics of interest to them. Each session included a "Discussion with the Dean" where students could ask questions of Dr. Patricia Koski, Associate Dean. These lunch seminars were very well attended and will be continued in the coming spring semester.

New Graduate Student Orientation Each August the Graduate School hosts an orientation for entering graduate students. The event formula provides graduate students with important information on their relationship and contract with the University of Arkansas and the Graduate School, but also includes valuable tips and techniques to help students succeed as graduate students. Breakout sessions on various topics are offered during the day. Session topics are: Multicultural Issues; Tuition/Assistantships/Fellowships; Getting Familiar with Fayetteville; and Graduate Student Panel. Approximately fifty faculty, staff and graduate students volunteer to work at New Graduate Student Orientation each August.

Graduate Student Family Picnic The Graduate School hosts a picnic for all graduate students and their families early in the fall semester. The first picnic was held in September 2007, and was attended by approximately 100 people. Due to its popularity, it is now an annual event held each September. Members of the Graduate Dean's Student Advisory Board host the picnic.

Office of Graduate and International Recruitment and Admission

Significant Achievements and Changes

Office of Graduate and International Recruitment*:*

- Began Fall and Spring Prospective Graduate Student Open Houses
- Began Graduate Research Opportunities Forum
- Claflin University, South Carolina and Grambling State University, Louisiana were added as Carver institutions bringing the total to 27
- Selected the inaugural group of Graduate Student Ambassadors
- Increased recruitment visits to targeted schools

- Hired Dylan Presley, International Student Recruiter and Kaylee Simmons, Graduate Assistant

Office of Graduate and International Admissions*:*

- International student enrollment exceeded 1000 (1040), the first time in the history of the University of Arkansas. There were 975 degree seeking and 65 non-degree students.
- Implementation of the Data Entry Center (DEC) to separate customer service emphasis tasks from data entry emphasis tasks, and the hiring of two additional Admissions Analysts to staff the new positions. It streamlined our workflow significantly.
- Full implementation of history scanning and reactivation of a committee to move forward with workflow processing implementation. History scanning is the first real stepping stone to paperless processing.
- Hosting site visits by Chau Thi Dieu Hien, Dr. Le Quang Minh , Dr. Tran Thi Hong, Dr. Thai Thi Thu Huong , and Natalya Anoshkina. Hosting officials from international universities and agencies is one of the most unknown but important things we do to foster international education and cultural exchange.

Sponsored Student Programs (SSP) Office*:*

- Centralized processing of SSP applications and improved the admissions flow/processing of applications.
- Implemented Graduation Recognition Programs honoring our students and their faculty advisors.
- Coordinated attendance of the 17 Bush/Clinton Fulbright Tsunami Relief Program sponsored students from the University of Arkansas, UALR, and the Clinton School to meet with former President George H.W. Bush during his visit to the UA campus on April 6, 2009.

Admissions Activities

There are no Graduate School of Business applications included in these numbers. Numbers are based on weekly admissions activity reports.

DOMESTIC ACTIVITY

	Apply	**Admit**	**Deny**	**Enroll**	**Matriculation**
Fall 2007	1652	896	64	680	75.9%
Fall 2008	1702	1053	53	672	63.8%
Change:	+50	+157	-11	-8	
	(3.0%)	(17.5%)	(-15.6%)	(-1.4%)	
Spring 2008	664	468	24	320	68.3%
Spring 2009	716	505	23	329	65.1%
Change:	+52	+37	-1	+29	
	(7.8%)	(7.9%)	(-4.2%)	(2.8%)	
Summer 2008	707	539	16	365	67.7%
Summer 2009	716	505	23	386	70.1%

Change:	+46	+11	+8	+21	
	(6.5%)	(2%)	(50%)	(5.7%)	

Significant (17.5%) increase in admitted students Fall 2008 vs Fall 2007, however newly enrolled are down 1.4%. We continue to see increases in the number of admitted and enrolled graduate students for spring and summer terms.

GRADUATE INTERNATIONAL ACTIVITY

	Apply	**Admit**	**Deny**	**Enroll**	**Matriculation**
Fall 2007	997	302	355	120	39.7%
Fall 2008	1089	413	336	154	37.2%
Change:	+92	+111	-19	+34	
	(9.2%)	(36.7%)	(-2.8%)	(28.3%)	
Spring 2008	313	112	76	63	56.2%
Spring 2009	369	132	76	64	48.4%
Change:	+56	+20	0	+7.5	
	(17.8%)	(17.8%)		(0)	(-1.5%)
Summer 2008	75	26	11	11	42.3%
Summer 2009	92	35	14	16	45.7%
Change:	+17	+9	+3	+5	
	(22.6%)	(34.6%)	(27.2%)	(45%)	

Very low matriculation rates continue for graduate international admits. Competition from other U.S. institutions, other countries, and awarding of assistantships are factors. Fall 2008 saw an increase in applications and 34 more new enrolls (28.3%) than Fall 2007.

UNDERGRADUATE INTERNATIONAL ACTIVITY

	Apply	**Admit**	**Deny**	**Enroll**	**Matriculation**
Fall 2007	367	205	10	135	65.8
Fall 2008	410	228	17	150	65.8
Change:	+43	+23	+7	+15	
	(11.7%)	(11.2%)	(70%)	(11.1%)	
Spring 2008	132	91	8	73	80.2%
Spring 2009	183	91	12	68	74.7%
Change:	+51	0	+4	-5	
	(38.6%)	(0%)	(50%)	(-6.9%)	
Summer 2008	68	38	3	26	68.4%

Summer 2009	70	31	1	22	70.9%
Change:	+2	-7	-2	-4	
	(2.9%)	(-18.5%)	(-66%)	(-15.4%)	

The overall matriculation rate is strong. Applicants, admits, enrolled are up 11% in Fall 2008. This is due, in part, to our focus on the new visiting student program.

Total applications processed per admission cycle – includes fall, spring, summer:

	2007	**2008**	**Change**
Domestic GR	3023	3171	+148 (4.8%)
International GR	1385	1550	+165 (11.9%)
International UG	567	663	+ 96 (16.9%)
TOTAL:	4975	5384	+409 (8.2%)

- The Graduate and International Admissions Office processed 409 more applications for 2008 than 2007, an 8.2% increase.
- The largest percentage increase was in undergraduate international applications which increased 16.9%. The largest numeric increase was in graduate international applications which increased +165 or 11.9%.

Overall graduate enrollment (including LLM degrees) increased 2.2% from 3297 in Fall 2007 to 3370 Fall 2008 (+73). There are 3192 degree seeking and 178 non-degree graduate students enrolled. Fall 2008 saw a total of 1040 international students enrolled, up from 958 Fall 2007 (+ 8.6%). This is the first time in the history of the University of Arkansas that international student enrollment hit the 1000+ mark.

There were 114 countries represented on campus, up 13 from the previous year. The top five countries represented are same as last year: India (175, -31), China (119, +24), Japan (105, +19), Bolivia (69, +7), and Korea (52, -3).

Fall 2008 saw a total of 99 sponsored students, up from 85 in Fall 2007 (+14, 16.4%)). Twenty three sponsoring agencies placed students at the University, up from 14 Fall 2007. Students represent 32 countries, up from 27 Fall 2007.

Staff Highlights

- Shani Farr was invited to be a mentor for the University of Arkansas' *LeaderShape* program, May 10-16, 2009. *LeaderShape* is designed to provide undergraduate students with insight and guidelines for leadership skills.
- Gloria Flores was invited to evaluate the 2009 Kosovo American Education Fund semifinalists via a remote process for American Councils in January of 2009. American Councils also invited her to serve as on-site evaluator at their office in Washington, D.C. on February 13 to review the candidates for the Ministry of Tatarstan scholarship program for the one year non-degree undergraduate and graduate students program.
- Marcy Nichols served as the Graduate School Team Captain for Race for the Cure.

Changes*:*

- Marcella (Marcy) Nichols was hired in July 2008 as the Secretary II for GIA), replacing Cassandra Schaffer.
- Stacey Clay was hired in July 2008 as the Management Project Analyst for IAO, replacing Keukeu Abdullah.
- In August, 2008 Lindsey Conaway and Mike Miller moved laterally as staff of the newly created Data Entry Center (DEC) within GIAO. Laura Glass (domestic admissions) and Alisa Casper Wright (international) were hired to replace Lindsey and Mike, respectively.
- In March, 2009, LeAnn Suggs accepted the position of Project/Program Specialist in the ISIS program, leaving Graduate Admissions. LeAnn took with her some of the data management duties she had done as Assistant Director of Domestic Graduate Admissions. Susan Byram assumed most of the daily workflow management and staff supervision tasks, and her title is now Assistant Director of Graduate and International Admissions.
- Kaylee Simmons was hired August, 2008 as the Graduate Assistant for Recruitment.
- Dylan Presley was hired in June, 2009 as the International Student Recruiter, replacing Lia Huddleston who left January, 2009.
- Erica Yeung was promoted from SSP Hourly to Fiscal Support Specialist, formerly known as Accounting Technician II.
- Huong Pham was hired as an Hourly staff for SSP on May 6, 2009; she will move to work with International Recruitment on July 1. Catherine Shock was hired as the Hourly staff for SSP to start on July 1, 2009. They replaced Erica Yeung.
- A position reclassification request for SSP Administrative Assistant I was submitted to Human Resources in February, 2009. A decision is expected in late July.

Information, Training, and Professional Development

In March 2009, Kendra Smith, Shani Farr, and Vicky Hartwell attended the National Association for Graduate Admissions Professionals (NAGAP) conference in New York City. Staff indicated that this conference was very rewarding and also allowed them the opportunity to network with other professionals.

Kendra Smith attended two Registered Student Organization (RSO) Advisor training workshops sponsored by the Center for Leadership & Community Engagement. These workshops are given to assist RSO advisors in navigating the RSO process. Ms. Smith is advisor to the Black Graduate Students Association.

Susan Byram and Stacey Clay attended the NAFSA Region III Conference for international student advisors in Merida, Mexico, November 3-6, 2008.

Susan Byram, Stacey Clay, Alisa Casper, and Gloria Flores attended the April 2009 Arkansas NAFSA State Meeting at Lake Point Center in Russellville, Arkansas.

Alisa Casper and Stacey Clay were trained in some areas of international credential evaluation so that they can assist in evaluations when volume is high. Training in this area is continuing.

Susan Byram continues to meet with the PASS/SEVIS Committee as plans to implement SEVIS II are continuing.

Assistant Director of Graduate Admissions provided ISIS and graduate admissions procedures training to Operations Management site coordinators from four sites in September 2008.

Assistant Director of Graduate Admissions gave a presentation to Dr. Fred Pohlman's class regarding requirements for entering the Graduate School.

Work continues on an ISIS/Admissions training manual, with staff working with Karen Jennings, Coordinator of Training for the ISIS project.

The Office of International Recruitment and Admissions and the Sponsored Student Programs Office hosted a site visit by Chau Thi Dieu Hien, International Relations Department, Vietnam National University, Ho Chi Minh City (VNU-HCM) March 16-20, wherein she was introduced to various aspects of admissions, credential evaluation, and Sponsored Student Programs.

The Office of International Recruitment and Admissions and the Sponsored Student Programs Office hosted a site visit by Natalya Anoshkina, International Relations Department and Head of Exchange Programs and Director of Regional Center for Evaluation of Foreign Diplomas, Far Eastern National University, Vladivostok, Russia on March 23-27, 2009, wherein she was introduced to various aspects of admissions, credential evaluation, and Sponsored Student Programs.

Lynn Mosesso attended the Council of Southern Graduate Schools annual meeting, February, 2009, in Norfolk, Virginia.

Lynn Mosesso attended a workshop on hiring agents to recruit international students at the University of Tennessee, Knoxville, in April 2009. The workshop was sponsored by the Southeastern Conference Academic Consortium of which the UA is a founding member.

Lynn Mosesso and Susan Byram continue to serve on the Board of Directors for the Foundation for the International Exchange of Students (FIES).

Revenue

The Director evaluated 119 international applications (up from 86 in FY 2007) for the Graduate School of Business, generating $2,975.

SSP management fee generated approximately $69,930 for fiscal year 2008, up from $64,900 FY 2007.

Unit Efforts

Graduate and International Admissions*:*

In August 2008 and January 2009, Susan Byram and Lynn Mosesso assisted with First Year Experience (FYE) Orientation Check-In and New International Student Orientation. Meetings continue with FYE, the Orientation Steering Committee, and ISS to streamline Orientation issues for international students.

History scanning continues for domestic graduate admitted student files and undergraduate international students enrolling from Fall 2003 forward. It is anticipated that all international undergrad history scanning will be complete by the end of 2009.

LeAnn Suggs and Susan Byram continue to work on new procedures manual. Initial data entry procedures are complete, as well as Search/Match documentation. Education procedures have been sent to Karen Jennings in the ISIS project to review.

All International Admissions staff (with the exception of Mike Miller) log in daily to the PHP Live Chat forum through the Office of Admissions and respond to any international inquiries.

Admission data queries are generated monthly and given to Admissions to clean-up. These queries ensure the accuracy of ISIS admissions data and provide a good data entry training tool.

The Assistant Director of International Admissions continues to assist with new international student orientation check-in and First Year Experience orientation.

Assistant Director of Admissions serves on the Personnel Action Committee (previously Performance Evaluation Committee) for the Graduate School.

The Director worked with UA Testing Services, the Office of International Students and Scholars, and Spring International Language Center on a proposal for the UA to become a test center for the International English Language Testing System (IELTS). The proposal was approved and contract signed in April, 2009. Administration of the IELTS will begin September 2009.

Sponsored Student Programs Unit Efforts*:*

SSP held a staff retreat for its staff on September 11, 2008 to discuss policies, procedures, goals and ways to improve the service we provide our constituents.

Catherine Cunningham attended a meeting with visiting IIE reps visiting the Spring International Language Center and University of Arkansas and with Maggie Hug (US-Mexico Commission for Educational and Cultural Exchange - Mexico Fulbright Comm. Rep) on July 22, 2008.

Catherine Cunningham coordinated the visit from Ryan Keane, Placement Manager from Latin American Scholarship Program of American Universities on July 23, 2008.

Gloria Flores attended a workshop on Working with Sponsoring Organizations and Embassies in Washington, DC on February 6, 2009 for training and recruitment purposes.

Gloria Flores and Catherine Cunningham hosted Chau Thi Dieu Hien, with the International Relations Department ECV 1000/VNU on March 16–17 and Natalya Anoshkina, the Fulbright Russian International Education Intern on March 24, 2009. We educated her about the SSP office procedures, policies and history.

Gloria Flores, Lynn Mosesso, Leyah Bergman-Lanier met with Ms. Chau Thi Dieu Hien, with the International Relations Department ECV 1000/VNU and Dr. Tran Thi Hong, Vice Director, Graduate Students, VNU to discuss admission processing for future ECV 1000 candidates on April 3, 2009.

The SSP Office coordinated the attendance of 17 Bush/Clinton Fulbright Tsunami Relief Program sponsored students from the University of Arkansas, UALR, and the Clinton School to meet with former President George H.W. Bush during his visit to the UA campus on April 6, 2009.

Gloria Flores, Catherine Cunningham, and Lynn Mosesso attended a meeting with the Department of Social Work (Jennifer Ezell, their Administrative Assistant and Dr. Marcia Shobe, Graduate Coordinator) to discuss the aspects of how to improve the admission rates of sponsored students on April 23, 2009.

Gloria Flores attended the NAFSA National Conference in Los Angeles, CA on May 25-29, 2009 for training and recruitment purposes.

Gloria Flores and Lynn Mosesso attended a meeting with the Department of Economics in the Graduate School of Business (Joe Ziegler, former department chair and Gary Ferrier, Department Chair) to discuss the aspects of how to improve the admission rates of sponsored students on June 3, 2009.

Domestic Recruitment Unit Efforts and Activities

A staff retreat was held late June 2008 at Mt. Sequoyah Conference Center.

The 2009 Attracting Intelligent Minds Conference (AIM Conference) was held February 19-22, 2009. The Graduate School in partnership with the BGSA hosted 12 students. The following units contributed funds to BGSA as sponsors: Biological Sciences, Business, Communication Disorders, Engineering, and Student Affairs. Three of the participants have returned as Carver students this summer and two have been accepted to UA Graduate School. Others are prospective students for Fall 2010.

Graduate Research Opportunities Forum (GROF) –March 4-6, 2009, coordinated by Shani Farr, hosted six faculty members and administrators from various institutions including: University of Arkansas at Pine Bluff, Fort Valley State University, University of Texas-El Paso,

Paul Quinn College, and Langston University. During the event, guests had the opportunity to visit with their desired program/departments, learn more about summer research opportunities for undergraduate students and retention efforts for graduate students. During the student presentations, the GROF participants were able to see firsthand how important academic research is to the University of Arkansas.

Open House The Graduate Recruitment Network (GRN) and the Graduate Recruitment Office hosted two Open Houses during the spring and fall semesters. Forty three prospects from eight states attended the December Open House and 15 prospects from six states attended the April Open House. Each event was very successful, and received excellent feedback from the prospective students.

Collectively, recruiters returned a total of 1,353(872 last year) prospect cards from various recruiting trips. Of those cards, Kendra supplied 261(164 Last year), Shani 516 (139 last year), Vicky 318 (87 last year), Gloria 250 (272 last year) and Joni supplied 8(no previous number was recorded for her). In total we increased the number of prospect cards by 481 (55.16%).

The Office of Graduate Recruitment attended, in total, 63 universities/colleges/career fairs and conferences from September 2008 through May 2009 versus 41 from the previous year. The average number of cards returned per trip is 21.47. Overall student attendance for all 63 recruiting trips in total exceeded 9,026 (attendance was not always recorded, in fact this year it was poorly recorded). Of the 9,026 students we recorded 3,918 were students of color (again, this number was poorly recorded this year). The average number of cards returned decreased this year by 22.2 (9.92%); however, keep in mind the total number of cards increased.

Recruiters rated each trip on a scale of one to five, five being high. The average rating was 3.66. The only visit to receive the lowest rating, a rating of 1, was the Loyola/Tulane fair attended by Kendra Smith. For each trip, recruiters were asked if they recommend attending again. The recruiters responded in the positive for 61 of 63 trips. Kendra does not recommend the above mentioned trip and National Black Graduate Student Association.

We attended 26 more university/fairs/conferences this year than last: Alabama Connection, Alcorn State University, Atlanta University Consortium, Benedict College, Allen University, Claflin University, College of the Ozarks, Grambling State University, Jackson State University, Lemoyne-Owen College, Louisiana State University, Loyola/Tulane University, Missouri Southern State University, Morris College, Mississippi Valley State University, Morris College, Norfolk State University, Prairie View A&M University, Rust College, Tennessee State University, Texas Women's University, Tougaloo College, University of Missouri, Voorhees College, Winston-Salem State University and Xavier University.

From last year, schools/fairs/conferences we did not attend were Spelman College, Arkansas Baptist, Henderson State (they cancelled their fair this year), Southeastern Missouri State University, University of Arkansas at Little Rock (which the WCOB attends), and University of Arkansas at Fort Smith.

<u>Attended the following conferences</u>***:***

MANNRS (Minorities in Agriculture, Natural Resources, and Related Sciences) Conference
SACNAS (Society for Advancement of Chicanos and Native Americans)
National Society of Black Engineers
Society for Hispanic Professional Engineers
National Black Graduate Student Association
Southeast Region McNair Conference**,** Atlanta, GA.

Provided cost share for faculty/staff to attend the following conferences***:***
National Council on Education for the Ceramic Arts
Southern Anthropological Society (SAS)
National Association of Black Geologists and Geophysicists
Geological Society of America
SACNAS (Society for Advancement of Chicanos and Native Americans)
MANNRS (Minorities in Agriculture, Natural Resources, and Related Sciences) Conference

Provided funding and administrative support to the Black Graduate Student Association.

Hosted 38 separate campus visits for prospective students, down from 48 last year. This is due to the implementation of two open houses.

In an effort to reach out to the business community and participate in an event that promotes diversity, Vicky Hartwell and Shila HawkTourtelot, Graduate Student Ambassador attended the Juneteenth Celebration at the Jones Center for Families in Springdale, Arkansas. They met several members of the business community that are interested in pursuing a graduate degree here at the University of Arkansas. The majority of these individuals were interested in programs within the Walton College of Business.

There were a total of 33 applicants (from nine Carver institutions) with 17 of those accepted to the summer George Washington Carver Research Program. The number is down from the 23 accepted last year. The program did not receive support from Fulbright College and the College of Education and Health Professions. However, the Walton College of Business participated for the first time in four years and supported three Carver students. Shani Farr, Graduate Recruiter, provided excellent assistance. (Please see the 2009 Carver Program Annual Report for full details).

Claflin University, South Carolina and Grambling State University, Louisiana, were added as Carver institutions.

Kendra Smith continued her role of advisor to the Black Graduate Students Association (BGSA).

Gloria Flores conducted a workshop on Applying to Graduate School co-sponsored by the Graduate School and Career Development Center held February, 2009.

The Graduate Recruitment Network met three times and co-sponsored two Graduate School Prospective Student Open Houses. The purpose of the Network is to establish a good communication link between all of the offices and academic programs responsible for graduate

and professional school recruitment at the UA, to share recruitment strategies and resources, and to plan on-campus recruitment events.

Now that the office of Graduate Recruitment is fully staffed, we enlisted fewer people outside of the office to help with recruitment initiatives:

- Dr. Paul Adams, Chemistry, shared a recruitment table with Kendra Smith for the Xavier University fair.
- Dr. Doug Rhoades assisted Gloria Flores at the SACNAS conference in Salt Lake City, Utah.
- Ms. Joni Marvel traveled to the University of the Ozarks fall career fair.
- Mindy Schmohl assisted Bryan Hill, College of Engineering, at the Arkansas Tech University fair.
- Carl Riley traveled to college fairs in Kingston, Jamaica; Nassau, Bahamas; and St. Lucia.
- Dr. Daniel Rainey attended the MANRRS conference assisting Ms. Shani Farr.

Communications

Ten communications are regularly sent to prospective students. These communications are generated by ISIS from information entered off of the prospect card or GRE scores. The cards are obtained through campus visitors, email inquiries, on-line submission, cards returned by Recruiters from various trips, phone and drop-in inquiries. GRE scores are sent to us from prospective students and automatically uploaded.

There were a total of 6,606 (6,077 last year) communications sent, an increase of 529 (8.7%).

We received 1175 requests for information from our on-line prospect card, up from 1148 (+2.35%), with peak periods being September, October, and April.

Emails are sent to Master's and Doctoral prospects one day after entry. We sent 639 (680 last year) Master's emails and 106 (136 last year) Doctoral. Master's emails were decreased by 41 (6.03%) and Doctoral emails by 30 (22.06%) from the previous year.

We have two postcards, one listing 10 Multicultural reasons to attend the University of Arkansas and one encouraging requests for Application Fee Waivers. We sent 610 (492 last year) Multi-culture postcards and 432 (320 last year) fee waiver postcards. The Multicultural postcard increased by 118 (23.98%); the fee waiver postcard increased by 112 (35%).

472 (105 last year) letters were sent to prospective Doctoral students eligible for a Doctoral Fellowship. 1,146 (1,415) letters were sent to students that sent GRE scores or scores automatically uploaded. Doctoral Fellowship letters increased by 367 (349.52%) whereas GRE letters decreased by 269 (19.01%).

Students who are below the undergraduate status of junior are mailed a brochure with campus information and a checklist of Graduate School preparation, research and application. We sent 263 (408 last year) of these brochures. The Self Mailer decreased by 145 (35.54%).

188 (65 last year) prospects that attend a Carver Program partner institution were mailed a Carver Program flyer. We increased the number of flyers by 123 (189.23%).

A Graduate School view book (*Prospectus*) containing information on the University as well as the application for admission and the application for assistantship were sent to 1,370 (1,246 last year) prospects. The prospectus mailing increased by 124 (9.95%).

We have partnered with the Fayetteville Visitor's Bureau for one mailing. We insert a letter in a Grad School envelope and deliver them to the Bureau. They then stuff the envelopes with Fayetteville Visitor Guides and mail them. Together we sent 1,380 (1,210 last year) Visitor Guides. The Visitor Guide mailing increased by 170 (14.05%).

In addition to the communications generated through ISIS, recruiters made follow-up phone calls and emails to prospective students.

International Recruitment Activities

Our new international student recruiter began employment on June 1, 2009.

There were a total of 13 academic scholarships awarded in February 2009 to undergraduate international students for the 2009-2010 upcoming academic year. Of these, two were Chancellor's Scholarships, three were Freshmen Academic Scholarships, six were Leadership Scholarships, and two were Silas Hunt Scholarships. In addition to scholarships awarded by the Office of Academic Scholarships, the John and Marie Lavallard Scholarship was awarded to a student from Macedonia.

The MOU between the UA and the Embassy of Kuwait regarding graduate student and visiting scholar placement was revised and signed in September 2008.

A new MOU between the UA and Vietnam National University (VNU) – Ho Chi Minh City regarding undergraduate and graduate students from East Central Vietnam 1000 (EVC 1000) placement was signed on November 8, 2008. In April 2009, a supplemental agreement was signed by the Information Systems Department, Walton College of Business. Lynn Mosesso coordinated both visits.

Gloria Flores and Leyah Bergman-Lanier, Director of the Spring International Language Center coordinated the visit from the Cultural Attachés from the Embassy of the Republic of Iraq, Dr. Hadi Khalili, Cultural Attaché and Dr. Jalal Shareef, Deputy Cultural Attaché on November 12, 2008.

Sponsored Student Programs Office submitted two (2) visiting student applications for the International Research and Education Exchange Board Global Undergraduate Scholars program,

the Muskie Fellowship Graduate Degree and Non-degree Seeking Program, and three (3) World Learning administered scholarship programs for one-year visiting student fellowships in January, 2009.

Gloria Flores visited U.S. based organizations and Embassies in Boston, MA, New York, NY and Washington, D.C. on February 9-13, 2009 in order to promote the UA's academic programs and services provided by Spring International Language Center and SSP for sponsored students.

As a result of a new Memorandum of Understanding between the UA and the Student Financing Agency of Rwanda (signed in January 2008) regarding graduate student placement, one student arrived in August 2008 and began his academic study and another student arrived in October and began his intensive English study at SILC. We have received 33 applications for Fall 2009.

The University of Arkansas joined a consortium of schools and universities for the placement of Presidential Scholars from Rwanda. A Memorandum of Understanding was revised and signed in May 2009 by this consortium and the Student Financing Agency of Rwanda (SFAR) regarding undergraduate student placement. Lynn Mosesso, Michael Freeman and Dr. Robert Mock travelled May 22-31, 2009 to Kigali, Rwanda with representatives of the consortium to interview and select students. Fifty-two students were chosen. Ten will be placed at the University of Arkansas in Fall 2009.

Mailed out advisors packets and informational/marketing pieces to advising centers in Peru, Argentina, Brazil, Chile, Mexico, Vietnam, China, Russia, Colombia, Bolivia, and many Caribbean islands.

Receive weekly reports from Hobson's Educational Guide website and monthly reports from StudyUSA.com/ESL.com websites with prospective student contact information. We receive between 500 to 3000 names per week. Prospective students are contacted by email on Tuesday morning each week.

Worked with the International Students and Scholars Office and implemented procedures for the Visiting Student Program. Fifty visiting international undergraduate students enrolled Fall 2008.

Facilitated campus visits for 14 prospective international students.

Participated EducationUSA college fairs in Trinidad/Tobago, Jamaica, the Bahamas, St. Lucia, Anguilla, and Belize. Talked with over 1200 prospects and have received 15 applications for Fall 2009. Twenty-one new Caribbean students enrolled Fall 2008: Bahamas – 6; Barbados – 1, Belize – 1, Dominica – 1, Jamaica – 4, and Trinidad- 8. We now have 44 students enrolled from the Caribbean.

Participated in EducationUSA college fairs in Brazil and Argentina, and assisted Spring International Language Center with fairs in Chile and Peru.

Contracted with Study USA to advertise in their world wide edition and web. Cost-shared with Spring International.

Responded to requests for application and admissions information through the Virtual Advisor program and the iao@uark.edu account.

Forms and Media Pieces and Web Presence

Forms updated/revised

- Operations Management application
- Undergraduate Advising Center's form
- "Quick Answers for Prospective Students" publication
- International Graduate, International Undergraduate, and Graduate Domestic Admission letters were revised to include information about compliance with the Arkansas Immunization law.
- Graduate Application
- International Undergraduate Application
- Request for Exception to Admissions Form (now combined with the "Review of Exceptions Form" Director Review form
- Degree sheet

The following forms were created

- A separate Application for Admission was created for the MSE program.
- A new reminder sheet regarding compliance with the Arkansas immunization law was developed and is now attached to the Immunization Form that goes out in all admissions packet s (International Graduate, International Undergraduate, and Graduate Domestic).

Media/marketing pieces created

- Worked with University Relations to create a new domestic student recruitment banner for college fairs and conferences
- Post card for summer REU programs
- New international folders (to be used in advisors and admissions packets)
- University of Oklahoma Job Search Guide AD
- *GradSource* AD
- College Town Profile/Campus Community Publications AD
- *Study in USA* magazine (received June 2009)
- Institute of International Education 2009 Calendar

Web Page Updates/Additions

- Graduate Application for Admission updated.
- 2008-2009 Academic Costs for International Students was updated.
- Information on additional scholarships was added to the website.
- The TOEFL requirement for the internet test was updated from 80 to 79 in the English Language Proficiency and FAQ areas.
- Carver website
- Graduate recruitment college/university/career/conference visitation calendar
- Study in USA web site

Unit Goals

- Continue to work with the ISIS Graduate Specialist to make sure data needs are met
- Work toward the automation of letters to applicants and students
- Implement workflow scanning processes for Admissions
- Continue revising the Graduate Application for Admissions and other documents as needed for the implementation of scanning
- Increase international and sponsored student recruitment activities
- Increase the number of sponsored students enrolled at the UA
- Increase outreach to Hispanic Serving Institutions and Historically Black Colleges and Universities
- Build a knowledgeable and professional recruitment team
- Create new and revise old printed recruitment materials
- Create Facebook page for both international and domestic prospective students
- Create on-campus visitation program for McNair Scholars
- Revise the current communication plan
- Continue to provide professional development opportunities to staff

George Washington Carver Project

Overview

Implemented in 1997, the George Washington Carver Research Program (GWCRP) was designed to establish mutually beneficial institutional relationships with Historically Black Colleges and Universities (HBCUs), Hispanic Serving Institutions (HSIs), and Tribal Colleges (TCs) as part of the continuing effort to increase the diversity of the graduate and professional student body. This goal is realized by encouraging students at participating HBCUs, and HSIs to engage in summer research and then pursue graduate and professional degrees at the University of Arkansas Graduate School.

This year's participating institutions are as follows:

• Claflin University	1 student
• Fort Valley State University	1 student
• Grambling State University	1 student
• Huston-Tillotson University	1 student
• Philander Smith College	3 students
• University of Arkansas	7 students
• University of Arkansas, Pine Bluff	2 students
• University of Texas, El Paso	1 student
	17 Total

While on campus, each intern worked directly with a faculty mentor on a structured research project.

Application and Selection Process

The initial call for applications was sent to faculty and administrators at each of the partner institutions during the fall semester. During the recruitment season (September 2008-March 2009), Kendra Smith, Coordinator of Diversity Initiatives & Outreach and Shani Farr, Graduate Recruiter, visited most of the participating institutions. All positions were advertised for Carver by attending Graduate School/Career Fairs and meeting with students and key administrators on each campus to provide eligible students with information about the GWCRP.

The Director of the George Washington Carver Research Program analyzed all the applications and transcripts for all departments except engineering before forwarding them to the appropriate administrator. Dr. Carol Gattis, in the College of Engineering analyzed the engineering applications before sending them to the appropriate faculty mentor. Students with less than a 3.0 GPA and 60 hours were automatically declined. Applications that progressed beyond the initial cut were sent to the department for further consideration. Of 33 applicants, 17 students were selected to participate in the 2009 GWCRP.

Implementation

The selected students arrived on May 17, 2009. As a part of the continued collaboration, the opening week activities were held with other university sponsored REU programs. These programs included Food Science, Physics, Chemistry, INBRE and Mechanical Engineering. Each program agreed to co-host the opening week activities May 17th & 18th. The welcome barbeque for the Carver/REU students was held at the University House. Additional combined activities included orientation and a welcome luncheon.

In addition to the formal research training, the Carver interns completed Carver specific assignments and participated in several co-curricular activities including a trip to the African-American Museum in Dallas, Texas to view a George Washington Carver Exhibit.

The interns participated in a weekly lecture series called Dinner & Dialogue. The series featured presentations that would either enhance their research experience while they were here or give them knowledge of graduate school preparation. The presentations and topics were as follows:

- "Just a Little Brown Spider," presented by Dr. Collis Geren, Vice Provost for Research and Dean of the Graduate School
- "Presentation Skills," presented by Dr. Lynn Meade, Professor, Department of Communications
- "Research Careers" presented by Dr. Chris Evans
- "Ethics & Research," presented by Dr. Dennis Brewer, Associate Vice Provost for Research

- "Applying to Graduate School," presented by Ms. Shani Farr, Graduate Recruiter and Ms. Vicky Hartwell, Director of Graduate Fellowships

Interns presented their research findings at the closing program on Wednesday, July 8, 2009.

Recommendations for Future Improvement

- Begin confirming departmental participation in the Carver Program in early Fall to allow the Graduate Recruitment office to recruit students during graduate school fairs at the Carver institutions.
- Budget for a Graduate Assistant specifically for the Carver Program to help with planning and other Carver activities.
- Add an activity where Carver students can interact with U of A Black Faculty & Staff.
- Pursue grant opportunities to fund more internship opportunities in disciplines that are not currently offered.
    - There was a significant decline in the number of students this year due to budget cut backs in the colleges as well as the loss of the Micro-Electronics Photonics REU.
    - Engineering & Business are the only disciplines represented this year. Those areas have not given our best yield in terms of graduate school acceptance and enrollment. We have to find a way to get disciplines such as Agriculture, Education, Music, and Biology back into the program. We had several applicants for these areas, but no funds were available to sponsor the internship.

Budget

Each participant received a $3000 research stipend, room and board, and reimbursement for travel to and from Fayetteville. Students participating in the Physics, Food Science, Mechanical Engineering, & Chemistry REU programs were compensated according to the provisions of the funding agency.

The UA graduate departments interested in mentoring a George Washington Carver intern provided the major funding for the program. Each department transferred $5,500 per intern to a Carver account established in the Graduate School. The departments with established REU programs were responsible for the expenses associated with their students.

Graduate Fellowships

Fellowships

In fall 2008, 8 new graduate students accepted the offer of the Distinguished Doctoral Fellowship. The total enrollment of distinguished doctoral fellows during fiscal year 2009 was 36; 31 were Walton-funded and five were non-Walton funded. In addition, there were 61 new Doctoral Academy Fellows; 58 were Walton-funded and 3 were non-Walton funded. There were a total of 179 doctoral academy fellows; 12 of these were named doctoral academy fellows with a Walton match.

It is expected that the economic downturn will negatively affect the number of fellowship students that can be recruited to the University of Arkansas for the next one to three years. The loss of revenue will especially affect recruitment of Doctoral Academy Fellows, impacting the ability of departments to recruit highly qualified students to their programs.

Fellowship students continued to take advantage of the direct-deposit option that began in fall 2007. The Director of Graduate Fellowships continued to have the responsibility of posting fellowships directly into the Integrated Student Information System (ISIS). This necessitated close coordination with the Office of Financial Aid and the Treasurer's Office to ensure that internal processes did not delay the disbursement of fellowship stipends.

Caliber of Students

Distinguished Doctoral Fellows continued to be from the top 1% of all students who attend graduate school. Likewise, Doctoral Academy Fellows were from the top 5% of all students who attend graduate school. The fellowships were a key component in attracting top graduate students to the University of Arkansas. This year's doctoral fellows came not only from institutions in surrounding states, such as the University of Kansas and the University of Alabama, but also from such institutions as Cornell University, Wellesley College, the University of North Carolina – Chapel Hill, the University of Arizona, the University of Maine, and Washington State University. International doctoral fellows were recruited from Germany, Nicaragua, Canada, Jordan, India, Taiwan and China. A student from Pakistan, with Fulbright funding, was also awarded a Doctoral Academy Fellowship.

Distinguished Doctoral Fellow Brent Williams accepted a position at Texas Christian University. Distinguished Doctoral Fellow Tammy Waymire accepted an assistant professor position at Northern Illinois University. Doctoral Academy Fellow Jeff Evans accepted a tenure-track assistant professor position at the University of Alabama in Huntsville. Doctoral Academy Fellow Ahren Johnston accepted an assistant professor position at Missouri State University. Doctoral Academy Fellow Nathan Gray accepted an assistant professor position at Young Harris College. Doctoral Academy Fellows Marc Holley and Suranjan Sarkar accepted positions in industry.

Doctoral Academy Fellow Carole Lee received the Outstanding New Member of the Year award from the University of Arkansas International Culture Team. She was also designated as an Arkansas Traveler by the Governor of the State of Arkansas.

Former Doctoral Academy Fellow Freddie Bowles, now a University of Arkansas assistant professor of foreign language education, was elected to the Arkansas Foreign Language Teachers Association executive board.

Doctoral Visit Fund

The dedicated doctoral visit fund allowed the Graduate School to assist departments in bringing 34 prospective doctoral students to campus. The visits aid in the recruiting effort for the Distinguished Doctoral Fellowship and Doctoral Academy Fellowship. The fund provided an opportunity for students and faculty to visit, for students to view the campus and its facilities and to tour Fayetteville and the larger Northwest Arkansas area. The visits were especially beneficial for students who had never been to the campus and surrounding area.

Graduate Student Travel Grants

The graduate student travel grant program continued to be an integral part of recruiting and retaining talented graduate students. Students used these travel grants to attend conferences in 37 states and the District of Columbia, and international conferences in Canada, Europe, Asia, Australia, and South America. The maximum reimbursable amount for master's and Educational Specialist (Ed.S.) travel grants was $600, and the maximum reimbursable amount for doctoral participant and doctoral presenter grants remained at $1,000. For fiscal year 2010, the travel grant award amounts will remain at the same level.

A total of 541 travel grants were funded during the fiscal year. A comparison of the six years of the travel grant program is shown in the table below:

Fiscal Year	Amount Expensed	Total Grants Awarded	Total Grants Expensed	Average Trip Expense
2009	$423,369	569	541	$783
2008	$344,069	454	423	$813
2007	$330,362	435	418	$790
2006	$293,610	391	365	$804
2005	$360,000	441	441	$816
2004 (Aug-June)	$237,032	321	321	$738

Three categories of travel are offered to graduate students: master/Ed.S., doctoral participant, and doctoral presenter. Students may apply for and be awarded one travel grant per year (July 1-June 30). Master/Ed.S. students who are awarded a travel grant are required to present a formal paper or poster. Alternate types of presentations, e.g., oral presentations of original work that may be appropriate to the student's degree program, are reviewed on a case-by-case basis. Doctoral students may apply for a participant travel grant during the first year of their academic program. This travel grant does not require the student to present research, but it does offer the

student the opportunity to network and learn more about the chosen field of study. Doctoral students may also request a presenter travel grant, with the intent to present research at a professional meeting/conference. The student must be a named author and the sole presenter at the conference. The research must carry the name of the University of Arkansas. The travel grants that were expensed during the past six fiscal years are shown below.

Trip Type	**FY2009**	**FY2008**	**FY2007**	**FY2006**	**FY2005**	**FY2004**
Master/Ed.S	189	106	90	91	176	135
Doctoral Participant	53	50	69	70	89	46
Doctoral Presenter	299	267	259	204	176	140
Totals	**541**	**423**	**418**	**365**	**441**	**321**

Graduate students in six colleges and more than 50 degree programs, including the interdisciplinary programs administered by the Graduate School, took advantage of the travel grant awards during the fiscal year:

COLLEGE	**MASTER/ED.S. AWARDS**	**DOCTORAL PARTICIPANT AWARDS**	**DOCTORAL PRESENTER AWARDS**	**TOTALS**
AFLS	51	5	59	**115**
ARSC	82	16	130	**228**
EDUC	15	8	22	**45**
ENGR	20	11	46	**77**
INTER	2	11	32	**45**
LAW	7	0	0	**7**
WCOB	12	2	10	**24**
TOTAL	**189**	**53**	**299**	**541**

All graduate students who are awarded travel grants are expected to be full-time students during the semester the travel occurs. The number of fellowship recipients, graduate assistants, and regular full-time graduate students whose travel was expensed in 2009 are listed below.

Student Type	**Master/Ed.S. Travel Grant**	**Doctoral Participant Travel Grant**	**Doctoral Presenter Travel Grant**	**Total**
Distinguished Doctoral Fellow	0	4	16	**20**
Doctoral Academy Fellow	0	21	65	**86**
Other Fellowship	28	1	5	**34**
Graduate Assistant	132	23	187	**342**
Full-time Graduate Student	29	5	25	**59**
Total	**189**	**54**	**298**	**541**

Southern Regional Education Board (SREB) -- State Doctoral Scholars Program

In fiscal year 2009, four new SREB scholars began their programs, bringing the total number of currently enrolled SREB-funded doctoral scholars to 14. There were six male and eight female SREB doctoral scholars. The programs of study they were enrolled in are Public Policy (8), Anthropology (1), Environmental Dynamics (1), Biological Engineering (1), Mathematics (1), and Comparative Literature and Classical Studies (2).

Students who are awarded this funding must be from a racial/ethnic minority (including Native Americans, Hispanic/Latino Americans, Asian-American, and African-American), and they must plan to become a full-time faculty member in a postsecondary institution upon completion of the doctorate. The program seeks to increase the diversity of faculty in postsecondary institutions by aiding students to pursue and complete the doctoral degree.

Benjamin Franklin Lever Tuition Fellowships

The Benjamin Franklin Lever Tuition Fellowship program is intended to increase diversity within graduate degree programs on the University of Arkansas-Fayetteville campus. Census data from the State of Arkansas is used as a benchmark to assist in determining diversity needs within specific degree programs. The fellowship supports those graduate students who are fully admitted into an on-campus degree program, but for whom tuition funding via a graduate assistantship or similar position is not available. This lack of departmental support may be due to limited departmental resources or because the structure of the degree program does not allow this option (*e.g.*, the Master of Arts in Teaching program).

Funding allocated for the Benjamin Franklin Lever Tuition Fellowship program enabled the Graduate School to award tuition support to 54 graduate students across 25 degree programs during fiscal year 2009. The students supported by the fellowship included 30 new recipients and 24 students continuing on the fellowship from previous years. The distribution across degree programs was:

Degree Program	**Doctoral**	**Master's**
Agricultural & Extension Education		1
Agricultural Economics		7
Anthropology	1	
Communication Disorders		1
Counseling/Counselor Education	1	2
Comparative Literature & Classical Studies	1	
Computer Science & Computer Engineering		1
Curriculum and Instruction	2	
Drama		1
Educational Administration		1
Environmental Dynamics	1	
Geography		2
Health Science	1	3
Information Systems		1

Kinesiology		10
Political Science		1
Public Administration		4
Public Policy	3	
Recreation		1
Rehabilitation		1
Social Work		3
Secondary Education		1
Vocational Education	1	
Workforce Development (formerly Adult Education)	1	1
Totals	**12**	**42**

Of the 54 awardees, 34 (63%) were female and 20 (37%) were male. The distribution of awardees based on ethnicity and gender is shown in the table below:

ETHNICITY	FEMALE	MALE	TOTAL
Asian	1	4	5 – 9.3%
African American	23	10	33 – 61.1%
Hispanic/Latino	1	0	1 – 1.8%
American Indian/ Alaska Native	2	1	3 – 5.6%
Caucasian	7	5	12 – 22.2%
Total	34	20	54 – 100%

During the year, four Lever fellows were awarded graduate assistant positions and one received funding from the Southern Regional Education Board (SREB), both of which include tuition payment.

Fifteen Lever fellows graduated with master's degrees during the academic year in the following programs:

PROGRAM	DOCTORAL	MASTER'S
Agricultural Economics		4
Communication Disorders		1
Computer Science & Computer Engineering		1
Elementary Education		1
Kinesiology		2
Public Administration		2
Social Work		3
Workforce Development		1

For students who do not have other financial resources, the Benjamin Franklin Lever Tuition Fellowship remained a valuable resource for beginning or continuing in their graduate studies.

Other Fellowships

The Graduate School offers $3,000 supplemental fellowships to assist in recruiting and retaining students to the Master of Fine Arts programs in Art, Creative Writing, Drama, and Translation. Thirteen new students qualified for and accepted these fellowships in fiscal year 2009, bringing the total number of M.F.A. graduate fellows to 49.

The graduate student who is funded by the Harry & Jo Leggett Chancellor's Fellowship completed his fourth year of eligibility. A female graduate student in Entomology applied for and was awarded the Leggett fellowship. This fellowship is awarded to a doctoral student for a maximum of four years.

During fiscal year 2009, Ms. Vicky L. Hartwell continued in her role as Director of Graduate Fellowships.

In the 2008-2009 year, Ms. Hartwell

- Administered the Distinguished Doctoral Fellowship, Doctoral Academy Fellowship, and Graduate Fellowship for Master of Fine Arts programs: reviewed nominations, made recommendations for awards, sent award packets, posted fellowship amounts to ISIS, adjusted awards when necessary, worked with financial aid counselors to resolve any questions regarding fellowships, tracked expenses to earnings for accounts, identified endowed accounts with adequate funding to award.
- Administered the Graduate Student Travel Grant program: reviewed and approved applications, entered into Access database, sent award notifications, approved expense transfers processed by Mr. Michael Rau, tracked expenses to earnings for account.
- Accepted the resignation of Mr. Michael Rau. Together with Ms. Gail Piha and Ms. Gloria Flores, reviewed applications for his replacement, participated in candidate interviews and recommended hiring Ms. Erica Yeung. She accepted the position. Trained Ms. Yeung in travel grant procedures.
- Administered the Benjamin Franklin Lever Tuition Fellowship program: reviewed nominations once per semester, made recommendations for awards, sent award packages, coordinated tuition payment with Ms. Paula Lasner, tracked expenses to allow maximum number of fellowships to be awarded.
- Administered the Southern Regional Education Board (SREB) – State Doctoral Scholars Program: reviewed enrollment compliance, coordinated tuition and fees payment with Ms. Paula Lasner, posted fellowship awards to ISIS when funding switched from SREB to Graduate School match for students in interdisciplinary programs, attended SREB fellows luncheons.
- Presented two sessions at Graduate Orientation on fellowships, graduate assistantships and travel grants.
- Served on Evaluation Review Committee, an ad hoc committee organized by Dean Patricia R. Koski to review and make recommendations regarding human resources issues for staff.
- Continued to travel to assist the Office of Graduate Recruitment with recruiting efforts. Schools visited included Arkansas State University (fall and spring), Oklahoma State University (fall and spring), University of Oklahoma (fall and spring), Northeastern State

University (spring), Missouri State University (fall and spring), Missouri Southern State University (fall and spring), University of Missouri, Columbia (spring), and College of the Ozarks (spring). Followed up with prospective students and faculty contacts.

- Presented information regarding graduate assistants to the Student Affairs/GA Supervisors' Workshop.
- Presented information on graduate school admissions and funding to University of Arkansas athletes (fall and spring).
- With the assistance of Ms. Diane Cook, scheduled and planned luncheons for SREB scholars (fall and spring).
- With Dr. Patricia Koski, presented graduate student and general funding information to the campus group of the Association for Women in Science.
- Attended the Compact for Faculty Diversity Annual Institute on Teaching and Mentoring in Tampa, FL. Mr. Willyerd Collier, Director of Affirmative Action, also attended the conference.
- Attended the November meeting of the GDSAB to answer questions about fellowship funding.
- Participated in the fall and spring Open Houses held by the Office of Graduate Recruitment.
- With the assistance of Ms. Diane Cook, planned the meeting and reception for current Distinguished Doctoral Fellows and Doctoral Academy Fellows that was held in February. Used suggestions from this meeting and the GDSAB luncheon to improve the information that is sent to new and continuing doctoral fellows regarding the disbursement of funds.
- Participated in the Graduate Research Opportunities Forum organized by the Office of Graduate Recruitment.
- Attended the Academic Financial Officers Luncheon in March. Dianna Lee presented information regarding the expected economic impact on foundation accounts, including those that fund doctoral fellowships and travel grants.
- Worked with Leslie Henslee and Tracy Joslin to refine the ISIS query that identifies potential fellowship candidates and generates letters to the students.
- Assisted in the start up of the Graduate Student Ambassadors program by designing the application form, and participating in the review of applications, candidate interviews, and recommendations.
- Attended the National Association of Graduate Admissions Professionals (NAGAP) conference in New York.
- Participated in the review of applications and candidate interviews for the position of international recruiter.
- Participated in the all-university commencement.
- Attended training for Blackbaud, the new foundation accounting system.
- Represented the Graduate School at Juneteenth. Ms. Shila Hawk, a graduate student ambassador attended with Ms. Hartwell.

Program Assessment

The Office of Program Assessment conducted two program reviews during 2008-09. The Environmental Dynamics PhD program, which is housed within the Fulbright College of Arts and Sciences, held a site visit in March 2009 and the completed review reports were disseminated in early May. The International Relations BA program, also housed within the Fulbright College of Arts and Sciences, was reviewed in April 2009 with the completed review reports being disseminated in early June. Both departments will complete the Strategy for Improvement/Maintenance documents during the fall 2009 semester. Two reviews did not occur because the programs in Russian Studies, BA and Applied Physics, MA were eliminated. Four other reviews were delayed for various reasons and rescheduled for the 2009-10 academic year.

As a result of the Higher Learning Commission's (HLC) accreditation visit during the spring of 2007, a concern that the "University Core" criteria needed to be reviewed and student assessment included in the review process was highlighted for a follow-up report. Therefore, the Director for Program Assessment, along with Associate Dean Chuck Adams from the College of Arts and Sciences, are continuing to co-chair a two-year effort to first review the criteria for each subject matter area of the core. Then, they will assist each department that offers core courses to develop student learning objectives, assessments and setup feedback processes that will return assessment results and suggestions for change to the faculty responsible for teaching the courses. The University-wide final report is to be forwarded to the HLC in June of 2010.

During the summer/fall 2008, all areas of the University Core were reviewed by the faculty teaching University Core courses. Each area submitted criteria changes and assessment methods to the University Core Committee for their approval. The University Core Committee approved the changes in March and April of 2009, and the Faculty Senate approved the changes in May 2009. The new assessment efforts began for some areas during the spring of 2009 and the other areas will initiate their assessment efforts beginning in the fall of 2009 with preliminary results due to the HLC in June, 2010. Both the Director for the Program Assessment Office and Associate Dean Adams will continue to assist in the process.

The initial review of Academic Policy 1630.10, Student Academic Achievement and Degree Program Outcomes, was approved following an analysis of the format and timing of the required policy reports. The college reports which are to be forwarded to the Provost's Office were changed from annual to every other year, and the first report is due June, 2009. Once these reports are received the initial format will be reviewed and changes made. The next report from the colleges will be due June 2011. The report entitled "Documenting Student Achievement" had additional data requirements. The report documented individual degree learning outcomes, assessment methods, feedback structure and changes to be made to the degree program.

The University of Arkansas Experience Task Force which was Co-Chaired by the Director of Program Assessment submitted its final report in May, 2008 following two years of fact finding and analysis. Twelve recommendations were submitted to the Provost's Office and Vice Chancellor for Student Affairs. As a result of the meeting, the Provost's Office will select areas for further study including teaching assistant training and several other recommendations that

could increase retention and graduation rates. These subject areas are also being highlighted at the state level and further work will be conducted during the next year. The task force report was highlighted during a two hour session as part of the Chancellor's Retreat in September, 2009.

The Director of Program Assessment is also serving on the University Transfer Student Task Force which is investigating barriers that impede transfer student success and insuring that the university is complying with new transfer legislation. The task force was formed during the spring of 2009 and will continue its activity through the 2009-10 academic year.

Additional activities performed by the Director of Program Assessment were to serve as Secretary for the University Course and Programs Committee (UCPC) which meets once each month, and to prepare documentation for the Faculty Senate agenda from the UCPC and the Graduate Council.

Activities for the 2009-10 academic year will include fourteen department/program reviews along with the previous mentioned activities.

Public Policy Ph.D. Program

Executive Summary

The 2008-09 academic year was characterized by many customary programs and practices such as seminars, qualifying exams, dissertation defenses, and research and professional development (RPD) seminars. Professors Brinck Kerr and Valerie Hunt took over program operations for the Public Policy Ph.D. Program (PUBP) in June 2007. The program continues to receive a large number of applications for admission. Students in the program continue to publish manuscripts in peer-reviewed academic journals and present many papers at international, national, and regional conferences. Students exiting the program continue to be placed in excellent positions.

Revisions to the PUBP methods sequence took effect in the fall of 2008. Students entering PUBP after the fall of 2008 are required to take at least three hours of quantitative methods. This requirement will make our students better prepared in the area of methods and more competitive in the academic job market. In with the fall of 2008, PUBP added to its list of courses PUBP 604V (Special Topics in Public Policy). Thus far, the following special topics courses have been offered under the new designation: Public Policy Research Design, Crime and Public Policy, and American Political Institutions and the Policy Process. In cooperation with the Department of Political Science each fall a special section of PLSC 5163 (Public Policy) will be offered for Ph.D. students only. In order to increase the quality of students in the program, the admissions process has become increasingly more selective. During 2008-09 the program added two new PUBP faculty members, Professors John Gaber (Sociology) and Patrick Stewart (Political Science). A new specialization, Policy Studies in Aging, will become effective beginning in the fall of 2009. The program administrators conducted an extensive self-study/report for the seven-year PUBP program review. The review was supposed to be conducted in the spring of 2009; however, due to inclement weather, the key external reviewer was not able to travel to campus as

planned. The program review has been postponed until either the fall of 2009 or the spring of 2010.

Student Enrollment and Admissions

The program enrolled 74 students in 2008-09. Enrollment continues to be diverse (see Table 1 below). The program receives many applications, the majority of which are turned down due to student qualifications, administrative capacity, and/or lack of fit. The acceptance rate for 2008-09 was 44 percent (16 out of 36 applicants); the acceptance rate for the previous academic year was also 44 percent. For fall 2008 the admissions committee granted admission to 6 out of 17 applicants. For spring 2009 admission was granted to 10 out of 19 applicants. (We have processed all applications for fall 2009; PUBP granted admission to 9 out of 20 fall 2009 applicants.)

Table 1. Breakdown of Active Students by Sex and Race/Ethnicity, 2008-09

	Female	Male	Total
African American	11	5	16
Asian American	0	0	0
Latina/Latino	0	1	1
Native American	2	1	3
International	7	6	13
White (non-Latina/Latino)	26	15	41
Total	46	28	74

Program Changes/Activities

The Future of the Program - Recent efforts by the Graduate School to increase administrative support for the policy program are helping the program take steps toward the goals of achieving greater prominence and recognition. In addition to adding new PUBP faculty members, strengthening the curriculum, and being more selective in the admissions process, the new program administration is developing strategies for placing program graduates in faculty positions at regional colleges and universities. The topic of placement is a recurrent theme in the program's research and professional development seminars. Professor Patrick Larkey, Adjunct Research Professor of Public Policy and former Associate Dean of the H. John Heinz III School of Public Policy and Management, Carnegie Mellon University, taught special topics courses in fall 2008 and spring 2009 on Public Policy Research Design for advanced PUBP students. Students who took advantage of this offering should be in an enhanced position to conduct quality dissertation research. A public policy research design course needs to be added to the methods sequence in PUBP. Furthermore, the program administrators have repeatedly emphasized the benefits of increased faculty-student research collaboration. A key for achieving greater prominence and recognition, faculty-student research collaboration has been a consistent, prominent theme in research and professional development sessions and in other meetings at which students are in attendance. The program administration will continue to encourage growth and development in the area of research collaboration.

New Specialization in Policy Studies in Aging – The new specialization in Policy Studies in Aging goes into effect in fall 2009. The specialization coordinators will be Professor Barbara Shadden (Rehabilitation, Human Resources & Communication Disorders/Office of Aging Studies) and Professor Jean Turner (Human Environmental Sciences).

Graduate Assistantships – The Graduate School recently changed our graduate assistantships to twelve-month positions. This has been helpful for recruiting and student support. It would be beneficial to develop approximately six more assistantship positions as the program would benefit from a higher ratio of full-time students to part-time students. Last year Middle East Studies (MEST) provided three MEST assistantships collectively to PUBP, PLSC MA , and PLSC MPA. One of these assistantships is permanently reserved for PUBP.

Specialization Activity/Changes – The program administrators review existing specializations on a continuing basis to determine if they are still adequately staffed and in demand. The ability to create new specializations and allow others to go dormant is a strength of the policy program's design. This flexibility allows administrators to respond to changing needs. Because two of the most active members of the Community Development specialization, Professors Margaret Reid and William Schwab, took new administrative positions within the university, the program administrators suspended the application process for this specialization for spring and fall 2009. The addition of Professor John Gaber to the Community Development specialization faculty, has allowed the program to resume consideration of applications to this specialization.

The Education Reform Department's Education Policy Ph.D. program goes into effect in the fall of 2009. In anticipation of this change, the program administrators have replaced the education policy specialization coordinator, Professor Gary Ritter (Department of Education Reform), with two new specialization coordinators. Professor Tom Smith (Curriculum and Instruction) is the new advisor for education specialization students in the K-12 area. Professor Mike Miller (Rehabilitation, Human Resources & Communication Disorders) is the new advisor for education specialization students in the Higher Education/Administration area.

Health policy is still an area of great demand, but we continue to lack the faculty resources to adequately staff this specialization. The new specialization in Policy Studies in Aging will help to meet some of this demand.

The Department of Criminal Justice at UALR has established a new Ph.D. in Criminal Justice. The program's inaugural class will begin studies in fall 2010. Since the inception of PUBP in 1999, the Criminal Justice specialization has relied heavily on UALR for faculty resources. Because continuation of this relationship is no longer feasible, and because we do not have enough faculty at UAF to support a specialization in Criminal Justice, PUBP no longer accepts applications for this specialization.

The American Review of Politics – The public policy program continues to be a major supporter of this quarterly, peer-reviewed journal. Specialization faculty members and advanced Ph.D. students are frequently asked to review manuscript submissions in their policy areas.

Capstone Project – Fall 2008 and Spring 2009 – The purpose of this year-long project was to examine the potential for collaboration and integration of those state social service systems serving youth. Accordingly, students interviewed state legislators and systems representatives to uncover potential and existing linkages between and among child welfare, juvenile justice, and children's behavioral health systems in Arkansas. From these interviews, document analyses, and meeting and conference attendance/observations, several findings were apparent. Although Arkansas has current legislative language which designates "systems integration" as the "public policy" of the state, collaborative or integrative practices have not yet become agency policy and practice. In addition, although these institutions do periodically collaborate, these collaborative efforts are largely ad-hoc rather than institutionalized. Policy recommendations include 1) finding or cultivating a policy champion for leadership purposes and 2) identifying benchmark states which have institutionalized collaborative and/or integrative practices and with what result.

Microelectronics-Photonics Graduate Program

Progress and accomplishments related to strategic plans and university priorities and goals

The microEP Graduate Program completed its "tenth year review" last year (spring 2007). The following items were recommended by the external reviewers, with current status on each recommendation added:

Budget increases to support 5-10 TA positions, travel, and events. The budget for these items has not changed, and remains fixed at two fully funded 50% TA positions and a maintenance budget of $250 per enrolled student in the prior academic year's fall semester.

Continued budget support of Director and Program Specialist's salary, and create new budget to support an Assistant Director. Strong support of Director and Program Specialist salary continued, and two months of summer funding was added for to the microEP budget for an Assistant Director position.

Improved faculty participation in active governance, and distribute management of some program elements to the core faculty members. Progress has been made here by addition of three Assistant Directors with specific responsibilities for microEP program elements, but increased direct faculty involvement in active governance has not been demonstrated.

Improved communication between Director and partner department's faculty. The administration of this task is a responsibility of new microEP Assistant Director Paneer Selvam in Civil Engineering. Program status reports were presented in spring 2008 to the EE, ME, and Physics Departments, with microEP status reports planned for all partner departments in the fall 2008 semester.

Three faculty were interested in supporting microEP as Assistant Directors with specific responsibilities and authority to manage portions of the program infrastructure. The three new Assistant Directors officially started their positions in late February 2008 with the following assignments:

Russell DePriest (microEP Adjunct Professor, Sandia Principal Member Technical Staff)

- Manages graduate student non-academic training and the undergraduate minor. The emphasis is providing an oversight into the research planning of all students, and providing training for the students in two major elements of the students' professional development – project development/milestone attainment combined with research vigor.
- Manages microEP minor, including student mentoring.
- Manages small group teams for student peer review of research progress.
- Reviews semester student research progress reports with each student.

Matt Gordon (Associate Professor, ME)

- Manages the microEP graduate student application process as well as other internal program aspects affecting our PhD level students.
- Advises PhD students after their first two years in the program.
- Manages PhD candidacy process.
- Manages graduate student application process and communication.

Panneer Selvam (Professor, Civil Engineering)

- Manages administrative support tasks that involve high levels of detailed scheduling and communication with a wide range of people.
- Manages microEP graduate student annual review process.
- Manages monthly all microEP student research presentations.
- Manages Graduate School student financial documentation process.
- Organizes new student orientation activities.
- Manages Industrial Advisory Committee meetings and communication.
- Organizes annual review of microEP program with partner departments.

An examination of all entering students into the microEP graduate program through the fall 2008 Cohort 11 class shows a total of 163 students will have entered the program since its inception in 1998. Sixty-one of these students are expected to be actively enrolled for fall 2008 with thirteen only lacking final report, thesis, or dissertation; one is passive (leave of absence for military duty), five have left the educational system without a graduate degree, sixteen have transferred to another graduate degree program before finishing a microEP degree, and eighty have completed one or more microEP graduate degrees and have left the University of Arkansas.

Of the 142 students that have not prematurely exited the program, thirty-three are female (23 percent of the student population).

Of the 142 students that have not prematurely exited the program, thirty-one are African-American or Hispanic (22 percent of the student population).

Of the thirty-one African-American and Hispanic students, five are currently beyond the MS degree and actively working on a PhD degree and three have already completed their PhD microEP degrees (one is in medical school and the other two having started tenure-track faculty jobs). Two of the active PhD path African-Americn students are female.

Seventy-three students have completed their MS microEP degrees through August 2008 graduation, with eighteen now actively enrolled in the PhD microEP program. Seventeen of the graduates were women (23%) and sixteen were African-American or Hispanic (22%).

Twenty-five PhD students have graduated through August 2008, including three male Africa-American graduates, one female Caucasian graduate, and one female Asian graduate. The remaining graduates are Caucasian males.

The microEP program implemented the first summer of a three-year NSF REU site beginning in Summer 2001 and won a second NSF REU site for five years beginning in Summer 2004. The summer 2008 program had fifteen students, including three African-American male students, one African-American female student, four white female students, one Asian male student, and six white male students.

The microEP program continued support of the following laboratory classes in the HiDEC processing facility through MEPH TELE fees expenditures of $10,000 for materials and equipment:

ELEG 5293L Integrated Circuit Fabrication Laboratory
ELEG 5243 Microfabrication
ELEG 4223 Solar Cell Design and Fabrication

Other expenditures from the MEPH TELE fee account included:

MEPH 5873 Fabrication at the Nanoscale ($4,000)
Purchase of Comsol License ($1,000)

This use of MEPH TELE fees to support classes being taught in HiDEC continued the microEP Graduate Program partnership with HiDEC, resulting in the policy continuing that allowed summer 2008 microEP REU participants to work in HiDEC without further additional charges to their mentoring professors or the REU site budget.

The microEP Industrial Advisory Committee met for the sixth time in April 2008 in conjunction with the Physics Centennial Celebration. Items that received significant discussion included increased internal and external marketing of the microEP program, new Assistant Director positions created, renaming of the program to reflect its increased nanoscale emphasis, and the need for continued emphasis on professional effectiveness training in addition to traditional academic emphases.

New initiatives to support teaching and research

A new undergraduate minor in Microelectronics-Photonics was implemented in fall 2007. This is the first undergraduate minor on the UA campus in which a group of faculty at the Graduate School level was given the authority to manage an undergraduate minor course of study that was not linked to an existing undergraduate degree program.

Ms. Kassie Wilson was hired in a part time clerical position funded by the new NSF S-STEM grant to support that grant's tactics and goals.

The microEP program will propose in the fall 2008 cycle that any student from a UA BS Engineering Department allowing shared hours between that department's BS/MS degrees will also be allowed to share hours between a BS Departmental degree and a MS microEP degree.

PhD microEP student Rob Sleezer suggested an exchange of missions for the student peer review groups and the monthly all microEP student presentations. That idea has been slightly modified and adopted by the microEP management team, and will be presented to the microEP faculty in the fall approval process.

Benchmarking evidence

The process has started with formal exit interviews of its graduates in the fall 2007 semester to gather information on program effectiveness on campus and in its training methods as viewed by its graduates.

Achievements in teaching, research, and public service that would not have occurred without the existence of the interdisciplinary program

The following grants and awards all are based in the interdisciplinary microEP graduate program as the educational program that supports the research, training, management, or educational mission of the grants. The role of microEP in each grant is indicated below:

1999			
NSF IGERT:	Schaper, Salamo	$2,200,000	Central concept
2000			
NSF MRSEC:	Salamo	$2,245,000	Education component
Dept of Ed FIPSE:	Salamo, Vickers, Turner	$ 280,000	Central concept
NSF PFI:	Loewer, Salamo, Vickers	$ 360,000	Management component
2001			
NSF REU (3 year):	Brown, Salamo	$ 353,000	Central concept
NSF IGERT RET:	Schaper, Salamo	$ 10,000	Central concept
NSF MRSEC RET:	Salamo	$ 20,000	Education component
FIPSE Supplement:	Salamo, Vickers, Turner	$ 25,000	Central concept
2002			
NSF GK-12:	Salamo, Vickers, Hobson	$2,700,000	Central concept
NSF REU RET:	Brown, Salamo, Vickers	$ 20,000	Central concept
2003			
NSF REU (5 year):	Brown, Salamo, Vickers	$ 625,000	Central concept
NSF Eng U/G Reform:	Vickers, Foster, Carter	$ 100,000	Central concept
2004			
NSF PFI:	Saxena, Salamo, Foster	$ 600,000	Entrepreneur education
2007			
NSF S-STEM:	Vickers, Oliver, Schaper	$ 600,000	Central concept

A NSF S-STEM grant was awarded to the microEP program to support graduate and undergraduate scholarships for the program's students. A new proposal will be submitted to the National Science Foundation in August 2008 for a third REU site grant. Because of new limitations set by the NSF, the grant period would only be for three years as opposed to the current REU grant for five years.

Problems to be addressed

No academic year teaching budget has been approved to support microEP-generated courses. Departmental decisions on scheduling of core microEP courses are being made with no consultation with microEP management to discuss implications of those decisions.

Faculty self-associated with microEP Graduate Program

Biol and Ag Eng	Jin-Woo Kim	
	Yanbin Li	
BioMed Eng	Mahendra Kavdia	Graduate Studies Committee Member
	Kaiming Ye	
Chemical Eng	Robert Beitle	
	Jamie Hestekin	
	Rick Ulrich	Graduate Studies Committee Member
Chemistry	Bob Gawley	
	Ingrid Fritsch	
	Xiaogang Peng	
	Julie Stenken	
	Ryan Tian	
Civil Eng	Paneer Selvam	Assistant Director, microEP
Comp Sci/Eng	Jia Di	
	John Lusth	
Electrical Eng	Simon Ang	
	Juan Balda	
	Bill Brown	
	Susan Burkett	
	Magda El-Shenawee	
	Omar Manasreh	
	Alan Mantooth	
	Hameed Naseem	
	Errol Porter	
	Len Schaper	Graduate Studies Committee Member
	Vasundara Varadan	
	Vijay Varadan	
Industrial Eng	Scott Mason	
Mechanical Eng	Matt Gordon	Assistant Director, microEP
	Adam Huang	
	Ajay Malshe	

	Bill Schmidt	
	Doug Spearot	
	Steve Tung	
	Sulin Zhang	
	Min Zou	
MicroEP	Russell DePriest (Adjunct)	Assistant Director, microEP
	Ron Foster (Adjunct)	
Physics	Laurent Bellaiche	
	Henry Fu	
	Eitan Gross	
	Jiali Li	
	Lin Oliver	Graduate Studies Committee Member
	Greg Salamo	
	John Shultz	
	Surendra Singh	
	Jak Tchakhalian	
	Ken Vickers	Director, microEP
	Min Xiao	

Faculty on microEP Graduate Program Assessment Team

Education Assessment	Sean Mulvenon
	Ronna Turner
Sociology	Douglas Adams

Adjunct faculty of the microEP graduate program

Dr. Russell DePriest	Principal Member Technical Staff, Sandia National Labs
Professor Ron Foster	Adjunct Assistant Professor
Dr. Jerry Jenkins	Sr. Engineer, CFDRC
Dr. Jerzy Krasinski	Oklahoma State University
Dr. Alexander Lostetter	Arkansas Power Electronics International, Inc.
Dr. Kalmakar Rajurkar	University of Nebraska-Lincoln
Dr. Malathi Srivatsan	Arkansas State University
Dr. Eric Stach	Purdue University
Dr. David Storm	USNRL
Dr. Jining Xie	The Pennsylvania State University

Thesis and Dissertation Titles Aug 2008-May 2009

August 2008 Graduates

- MEPHMS: "Pressure Dependent Studies of the Glass Transition Temperature of Intermediate and Fragile Glass-Forming Systems"; James F. Cooper, III *(currently a doctoral student in the microEP Graduate Program)*
- MEPHMS non-thesis: Vikrant Varesh Joshi *(Engineer, Micron Technology Incorporated)*

- MEPHPH: “Growth and Characterizations of Organized Nanostructures”; Ji Hoon Lee *(Assistant Professor, Department of Electrical Engineering, Kwangwoon University)*
- MEPHPH: “Carbon Nanotubes and Magnetic Nanomaterials as Substratum for Neuroscience Applications”; Kiran Rangaswamy Aatre *(Research Scientist, Indian Institute of Science Campus)*
- MEPHMS: “Electronic Noise Spectroscopy on In0.35Ga0.65As Quantum Dots”; Timothy Morgan *(currently a doctoral student in the microEP Graduate Program)*
- MEPHMS: “Alternative Processing Methods for Copper Through Silicon Vias for 3D Packaging”; Gayathri Devi Jampana *(Applications Engineer, Brewer Science Incorporated)*

December 2008 Graduates

- MEPHPH: “Cubic and Hexagonal GaN/AIN Superlattice Structures for Near-Infrared Detector Applications”; Eric Anthony DeCuir Jr. *(Post Doc, University of Arkansas EE Department)*
- MEPHMS: “Study of the Melting of Transition Metal Nanoclusters and Their Application to The Vapor-Liquid-Solid (VLS) Model”; Nikhil Pradeep Joshi *(Project Engineer, Carson Engineering and Manufacturing Incorporated)*
- MEPHMS: “Electric Field Assisted Vertical Alignment of Micro Particles in a Microfluidic System”; Sucharitha Kasinadhuni *(Diffusion Engineer, Micron Technology Incorporated)*
- MEPHMS non-thesis: Sree Sathya Kothakota-Vanam; *(currently in job search)*
- MEPHMS non-thesis: Madhu Mamillapalli *(Engineer, Micron Technology Incorporated)*
- MEPHMS non-thesis: Sandeep Nath Mudedla *(Software Developer, ProSys Incorporated)*

May 2009 Graduates

- MEPHMS non-thesis: Ujjwala Darvemula *(currently in the MBA program at the Walton College Graduate School of Business)*
- MEPHPH: “Development of a Nanowire Based Titanium Needle Probe Sensor for Glucose Monitoring”; Devesh Chandrashekhar Deshpande *(Engineer, Intel)*
- MEPHMS: “Imaging Second-Harmonic Radiation and Scattering Patterns in ZnO Micro/Nanostructures”; Katrina Geren *(currently in job search)*
- MEPHPH: “Packaging Technology for Protection of Electronic Devices and Integration of Stimulus-Specific Detection”; Matthew William Kelley *(Senior Mechanical Engineer, Lockheed Martin Missiles and Fire Control)*
- MEPHPH: “Droplet Assisted Self-Assembly of Semiconductor Nanostructures”; Kimberly A. Sablon *(Researcher, U.S. Naval Research Laboratory)*
- MEPHPH: “Modeling of Compositionally Graded Barium Strontium Titanate From First Principles”; Laura Elizabeth Walizer *(Researcher, Army Corps of Engineers Engineering Research & Development Center)*

Student Publications 2008-2009 (Partial List with Students' Names Underlined)

- Selvam, R. Panneer; Hamilton, Matthew T.; Johnston, Joseph E. Spray Cooling Modeling: Droplet Impact and Vapor Growth Effects on Heat Transfer in Microgravity and Macrogravity. Journal of Thermophysics and Heat Transfer.
- Dorogoan, V.G.; Mazur, Yu I.; Lee, J.H.; Wang, M.; Ware, M.E.; Salamo, G.J. Thermal peculiarity of AIAs-capped InAs quantum dots in a GaAs matrix. Journal of Applied Physics. #104. 2008.
- Woten, Douglas A.; El-Shenawee, Magda. Error Analysis of Breast Tumor Siganture versus Skin Thickness at Microwave Frequencies. IEEE. 2008.
- Shumate, Seth D.; El-Shenawee, Magda. Computational Model of Ductal Carcinoma In Situ: The Effects of Contact Inhibition on Pattern Formation. IEEE Transactions on Biomedical Engineering. Vol 56, No. 5. May 2009.
- Carr, Joseph Alexander; Hotz, Daniel; Balda, Juan Carlos; Mantooth, Alan; Ong, Alvin; Agarwal, Anant. Assessing the Impact ofSiC MOSFETs on Converter Interfaces for Distributed Energy Resources. IEEE Transactions on Power Electronics. Vol 24, No. 1. January 2009.
- Keyes, Brian; Brogan, Jeffrey; Gouldstone, Christopher; Greenlaw, Robert; Yang, Jie; Fraley, John; Wester, Bryon; Schupback, Marcelo. High Temperature Telemetry Systems for in Situ Monitoring of Gas Turbine Engine Components. IEEE. December 11, 2008.
- Schaper, Leonard; Liu, Yang; Burkett, Susan L.; Kamto, Alphonse; Jampana, Gayathri; Jacob, Susan; Abhulimen, Isibhakhomen Umolu. Intergrated System Development for 3-D VLSI. IEEE. 2008.
- Kunets, Vasyl P.; Easwaran, Saptharishi; Black, William T.; Guzun, Dorel; Mazure, Yuriy I.; Goel, Niti; Mishima, Tetsuya D.; Santos, Michael B.; Salamo, Gregory J. InSb Quantum-Well-Based Micro-Hall Devices: Potential for pT Detectivity. IEEE Transactions on Electron Devices. Vol 56 No 4. April 2009.
- Alahmed, Zeyad; Fu, Huaxiang. Polar Semiconductor ZnO under inplane tensile strain. Physical Review B. 2008.
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- Gan, Chenli; Zhang, Yanpeng; Battaglia, David; Peng, Xiaogang; Xiao, Min. Fluorescence lifetime of Mn-dopd ZnSe quantum dots with size dependence. Applied Physics Letters. #92. 18 June 2008.
- Kareev, M.; Prosandeev, S.; Liu, J.; Gan, C.; Kareev, A.; Freeland, J.W.; Xiao, Min; Chakhalian, J. Atomic control and characterization of surface defect states of TiO2 terminated SrTiO2 single crystals. Applied Physics Letters. 11 August 2008.

Conferences at which Students Presented June 1, 2008–May 31, 2009 (Partial List)

- 2008 IEEE International Symposium on Antennas and Propagation; Woten, Douglas; 1)"Error Analysis of Breast Tumor Signature vs. Skin Thickness of Microwave Frequency" 2) "MEMS Platform for Planar Broadband Dual-Linearly Polarized Antenna"

- Raytheon Anti-Tamper (AT) Conference, October 23, 2008; J. Sattler and Matt Leftwich; "Non-Intrusive Hardware Anti-Tamper Techniques"
- IMPAS 2008: The 41st International Symposium on Microelectronics; Darvemula Ujjwala; "Understanding the behavior liquid crystal Polymer in laser assisted bonding for wafer level packaging MEMS and related Microsystems"
- 2009 Annual Williamsburg Workshop on Fundamental Physics of Ferroelectrics; Walizer, Laura; "Modeling of compositionally graded barium strontium titanate from first principles"
- Materials Research Society Spring Meeting 2009; Jacob, Susan; "Integrated Capacitors with Nb2O5 Dielectric for Decoupling Applications"
- ICMCTF 2009: 36th International Conference of Metallurgical Coatings and Thin Films; Koirala, Sudip; "Experimental and Numerical Plasma Characterization in a Deep Reactive Ion Etch System"

Other Student Awards and Scholarships, June 1, 2008 – May 31, 2009 (Partial List)

- Kim Sablon (Cohort 6, BS Chemistry, December 2003) won a National Science Foundation East Asia and Pacific Summer Institute (NSF-EAPSI) fellowship to do research at the Australian National University in the area of nanotechnology for eight weeks, starting June 16, 2008. Kim worked with Dr. Chennupati Jagadish in the Department of Electronic Materials Engineering, Research School of Physical Sciences and Engineering. While in Australia Kim's main project involved thoroughly investigating various QD structures for the determination of structural parameters (doping and spacer thickness) on the QD electronic band structure. The structures were designed to overcome issues of the low absorption cross-section of quantum dots while minimizing strain and to overcome issues encountered in varying the band gap of quantum dots for spectral tuning.
- Rob Sleezer (Cohort 9 BS/MSEE, Oklahoma State, May 2006) received an NSF grant to travel to India during summer 2008 in the Study Abroad Program with ELEG professor Dr. Vasundara Varadan. He spent five weeks at the Indian Institute of Science in Bangalore, India, working with students and faculty of the Materials Research Center and Electrical Communications Engineering Departments. The interdisciplinary project brought the aforementioned departments together to design and begin fabrication of a tunable microwave device comprised of a split-ring resonator by using a ferroelectric as a dielectric.
- Seth Shumate (Cohort 9, BS Physics Hendrix, May 2006) received an award from the NSF/IREE (International Research and Education in Engineering) under the mentoring of ELEG professor Magda El-Shenawee to travel to Scotland in the summer and fall of 2008 to conduct collaborative research on ductal carcinoma in-situ of the breast model at the University of Dundee for six months with the leading theoretical biologists in the field.
- Ed Proctor (Cohort 12, non-traditional student, BS Physics/MSEE) was awarded a four year UA Distinguished Doctoral Fellowship to begin in the spring 2010 semester. He has not yet selected a professor for his Ph.D. work.
- Benjamin Newton (Cohort 12, BS Physics UAPB, May 2009) was awarded a four year UA Distinguished Doctoral Fellowship and a five year Department of Defense Science, Mathematics, And Research for Transformation (SMART) Program scholarship, both

beginning in the fall 2009 semester. He will be continuing his work with Dr. Hameed Naseem (EE) he began during the last two summers as a REU student on our campus.

- Matthew Young (Cohort 12, BS Engineering Arkansas Tech, May 2009) was awarded a four year UA Distinguished Doctoral Fellowship to begin in the fall 2009 semester. He will be working with Dr. Vasu Varadan (EE), and is on a research grant supported trip this summer to India with Dr. Varadan.

Arkansas Center for Space and Planetary Sciences

1. Status and Progress

1.1 Introduction

The Arkansas Center for Space and Planetary Sciences is a multi-disciplinary research and educational organization. It has 18 faculty from seven departments, and currently 21 PhD students. The Center's research laboratories, staff offices, student offices, the Director's office, and some auxiliary faculty offices are located in the old Museum Building, MUSE. The building contains a planetarium used for classes in ASTR, SPAC, and MEEG, and for outreach activities. MUSE also has a meeting room and partitioned areas on the gym floor used for a library, auditorium, and the program office for the Arkansas Galaxy Evolution Survey.

The Center serves two distinct but interrelated roles at the University. It is a research organization which maintains facilities, equipment, instrumentation, and computers for research in a wide range of space and planetary sciences. Outreach activities are a significant part of these efforts. Additionally, it is the home for the interdisciplinary graduate degree program in Space and Planetary Sciences (SPAC), created in 2005.

1.2 Center Direction

The major institutional change within the Arkansas Center for Space and Planetary Sciences is the resignation of Derek Sears as Director in Summer 2008. He has been replaced by Larry Roe (one of the founding Associate Directors of the Center) in an interim capacity. Current (and previous) Deputy Director Rick Ulrich has assumed the additional function of Graduate Coordinator.

It was anticipated that funding to conduct a nationwide search and hire a permanent, full-time Director, in an endowed Chair position, would be available, but that did not happen. We expect to make another attempt at securing the necessary funds in Fall 2009. In anticipation of that search, an exploratory committee has been formed to identify potential candidates.

The Center is now at the end of the fourth year of its current five-year plan. It would normally be advisable to re-visit the plan at this point, but the faculty have decided to delay any revisions until a new Director is selected. It is felt that the new Director will likely have new priorities and will bring expertise in new areas, offering the potential to redirect our focus.

In the current Five-Year Plan, the acquisition of baseline funding to support the degree programs in Space and Planetary Sciences was addressed as a major goal. That goal has not yet been achieved, and is our highest priority at this time.

As part of the continuing effort to save funds, the position of Center Manager, previously held by Hazel Sears, was eliminated on her retirement. Most of her previous duties are now being shared among the Director, Graduate Coordinator, and Programs Administrator, Jessica Park.
New faculty added to the Center rolls were Adam Huang, an assistant professor in Mechanical Engineering who has experience in small spacecraft (nano-sats) and Jason Tullis, an assistsant professor in Geosciences with expertise in remote sensing and mapping.

1.3 Research

The Center's research programs continued successfully. Table 1 shows the seven grants currently in effect. These grants have seven different PI's and a total value of approximately $2.8 million. Table 2 lists proposals submitted this year. In addition to proposal activity, Center faculty and students produced over 50 publications and conference presentations.

Table 1. Grants in effect, 2008-2009.

PI	Co-I	Title	Agency	Amount
Dan Kennefick	J. Kennefick, C. Lacy, M. Seigar,	Arkansas Galaxy Evolution Survey (AGES)	NASA-EPSCoR	$503,838
Julia Kennefick	D. Sears	REU Site: Interdisciplinary Research Experience in the Astronomical, Space, and Planetary Sciences	NSF	$273,750
Derek Sears		Radiation and Thermal History of Stardust Particles	NASA	$421,090
Rick Ulrich	L. Roe, V. Chevrier, M. Leftwich	Optical Probe for Regolith Analysis (OPRA)	NASA	$402,955
Fangzhen Teng		Magnesium Isotopic Investigations of Oceanic Basalts and Olivines	NSF	$175,022
Adam Huang	L. Roe	BalloonSat-based Micro Thruster Flight Tests	ASGC	$29,644
Larry Roe		Arkansas Center for Space and Planetary Sciences - Infrastructure	NASA	$1,000,000

Table 2. Proposals submitted by Center faculty, 2008-2009 (partial list).

PI	Co-I	Title	Agency	Amount	Status
Vincent Chevrier	L. Roe, R. Ulrich	Experimental study of the stability of prebiotic organic volatiles on the surface of Titan	NASA	$567,047	Pending
Vincent Chevrier	L. Roe, R. Ulrich	Transient numerical model of diurnal water vapor dynamics in subsurface environments on Mars and other planetary bodies	NASA	$409,476	Pending
Vincent Chevrier	L. Roe, R. Ulrich	Transient numerical model of diurnal water vapor dynamics in subsurface environments on Mars and other planetary bodies	NASA	$550,813	Pending
Vincent Chevrier		Experimental and theoretical study of the formation, stability and detection of perchlorates and other chlorine oxidation states on Mars	NASA	$423,278	Pending
Vincent Chevrier		Experimental study of the formation and stability of phyllosilicates on Mars: Implications for the early martian environment	NASA	$403,278	Pending
John Dixon	V. Chevrier, R. Ulrich	An experimental and numerical study of fluid mechanics and geomorphological processes in liquid flows on the martian surface	NASA	$459,303	Pending
Rick Ulrich	J. Dixon, V. Chevrier	Transient numerical model of diurnal water vapor dynamics in subsurface environments on Mars and other planetary bodies	NASA	$411,708	Pending
Rick Ulrich		Visual Infrared Mapping Spectrometer Studies of Saturn Moons	NASA	$8891	Funded
V. Chevrier	R. Ulrich	Kinetics of Clathrate Hydrate Phase Changes on Mars	NASA	$26,000	Pending

Fangzhen Teng		Magnesium Isotopic Investigations of Oceanic Basalts and Olivines	NSF	$175,022	Funded
Fangzhen Teng		Magnesium and iron isotopic investigation of lunar samples	NASA	$227,625	Pending

1.4 Education

1.4.1 Undergraduate program – the REU

The Research Experience for Undergraduates (REU) program is an interdisciplinary summer program that the Center has conducted since 2002. The first three years were funded by an NSF award, while years 2005-2008 were supported entirely by various Center research grants. Beginning in Summer 2009, we are again funded by NSF. This ten week program brings typically 8-12 students from a variety of science and engineering backgrounds to our campus to research topics in space and planetary sciences. The students are assigned mentors in their respective research areas, and the students get a chance to experience life as a graduate student. REU student research interests vary from geomorphology to instruments for spacecraft. The students also prepare midterm orals, end-of-term posters, and generally attend a follow-up national conference. In recent years, about 75% of the participants in this program present their work at the annual Lunar and Planetary Science conference.

1.4.2 Graduate degree programs in Space and Planetary Sciences

The SPAC degree program produced its fourth graduate in 2008, when Katie Bryson completed her PhD requirements and left for a position at NASA-Ames Research Center. Four additional PhD students are expected to graduate in Fall 2009.

Of the 21 current students, 15 have passed the PhD candidacy exam. Seven of the 21 have major professors in the College of Engineering, and 14 have advisors in Fulbright. Faculty currently advising students are Mantooth (1), Sears (3), Ulrich (4), Chevrier (2), Dixon (3), Kral (1), Lacy (2), Mattioli (1), Dan Kennefick (1), and Julia Kennefick (3). Eighteen of the students are US citizens, and 8 are female. The high quality of the students participating in this program is worth stressing. Among the 23 students that will be in the program this Fall (counting new Fall 2009 enrollees), all are in the PhD program, one is a DDF, and five are DAF.

The goal of the SPAC degree program is to attain and maintain a population of 50 students. We have grown from zero in 2005 to 22 currently, so we have been achieving the growth we need to reach that goal. However, the enrollment for Fall 2009 is too low to maintain that growth due to funding uncertainties and the faculty's reluctance to admit students without a high level of confidence of securing funding to support them.

1.4.3 Public Outreach Program

Outreach is a significant aspect of the Center's educational operations. The Center monthly newsletter, Space Notes, is distributed on campus and to other interested parties. *Meteorite* magazine is written for a wide audience and published quarterly. We provide a meteorite identification service which results in about 30-35 sample submissions per year from members of the public. The Center offers 6-8 public lectures per year, including the Barringer lecture

(funded by the Barringer Crater Company) each semester and the Arkansas Public Lectures in Space and Planetary Science, typically given by Center faculty four times per year.

This year's Barringer lecturers were Dr. Melissa McGrath, chief scientist at NASA-Marshall, who spoke on *Jupiter's Galilean Satellites* in Fall 2008, and Dr. Simon Mitton, Director of Total Astronomy Limited and managing editor for International Journal of Astrobiology whose lecture was *Conflict in the Cosmos – The Life and the Science of Fred Hoyle*, in Spring 2009. The Public Lecturers were Glen Mattioli, who presented *Applications of Satellite Geodesy to Neotectonics and Volcanology: Examples from the Leading and Trailing Edges of the Caribbean Plate*, and Adam Huang, who spoke on *Photo Structurable Glass Ceramics Enabled MicroFluidic Thruster Systems for Pico/Nano Satellites*.

The Public Lecture series was limited to two Center faculty speakers this year due to a new initiative in SPAC 5161 – Seminar. Students were required to identify an external speaker and make all arrangements necessary to bring that individual to campus. These were advertised events and open to the public, and we feel that they were very successful. The Seminar Speaker Series consisted of:

- Peter Truethardt – UALR - "Dynamical Simulations of Three Resonance Ring Barred Spiral"

- Dr. Margaret Trippe - Georgia State U. - "A Multi-Wavelength Investigation of the Nature of Type 1.8/1.9 Seyfert Galaxies"

- Dr. Allen W. Archer - Kansas State University - "Cyclic Tidal Rhythmites: Paleoastronomical and Paleoenvironmental Significance"

- Dr. Alfonso F. Davila - SETI Institute & NASA Ames Research Center, Planetary Science Division - "Follow the Water, Follow the Salts: Learnings from the Atacama Desert about the Search for Life on Mars"

- Dr. Matthew Greenhouse – NASA Goddard Space Flight Center, Project Scientist for James Webb Space Telescope - "The James Webb Space Telescope Mission Overview"

- Dr. Megan Elwood Madden – University of Oklahoma - "What are Gas Hydrates?"

- Dr. Amanda Hendrix - Jet Propulsion Laboratory - "Exploring the Enigmatic Worlds of Europa and Enceladus"

We also provide planetarium demonstrations, on request. From July, 2008 to June, 2009, we gave educational programs in the planetarium for over 500 local school students, including students from Lingle Middle School, Rogers Heritage High School, Helen Tyson Middle School, and Turnbow Elementary School. Our students also left campus to give presentations at Leverett Elementary, Springdale Central Junior High, West Fork Elementary, Bentonville Thomas Jefferson Elementary, and at Springdale Library.

The Center has provided two annual summer workshop opportunities for K-12 teachers in Arkansas, the week-long STORI Workshop in astronomy for teachers in grades 4-8, and the 3-day WebScopes in the Classroom Workshop for teachers in grades 7-12. The STORI Workshop was most recently offered in 2007, and the WebScopes program in 2008. Due to very low attendance, these programs are being reevaluated and may not be continued.

1.5. Personnel

The Center has three full-time personnel, all of whom are also completely involved in the SPAC degree program. All three positions are provisional, and have previously been supported by outside sources, including funds from the Keck Foundation, NSF-EPSCoR, NASA competed proposals, and appropriation funding routed through NASA.

Research Assistant Professor – Vincent Chevrier
Vincent came to the Center as a post-doctoral researcher in 2005, and has recently become a Research Assistant Professor and granted Graduate Faculty I status. He is the only faculty member whose efforts are full-time with the Center; he is the major professor for two SPAC students, and is an important advisor to 7 others. He has over 70 publications and presentations and is the major initiator of research proposals in the Center.

Programs Administrator – Jessica Park
Jessica fills the only administrative position for the Center and SPAC, under the university title of Project Programs Specialist. She has worked in this position since May 2005. Her salary is partially covered by revenue from Meteorite Magazine, a popular periodical published quarterly by the Center. For the magazine, her duties include handling all subscription issues (creating subscriptions, handling and depositing funds, answering inquiries, etc.), selling and shipping back issues, advertising sales, other interactions with advertisers, interactions with the technical editors in Arizona, magazine layout and proof preparation, all interactions with the printer, and mailing. Essentially, she handles all aspects of the magazine production and distribution other than selection of articles and technical editing.

Her other responsibilities include: preparation and distribution of all Center publicity, such as posters, flyers, mailings, and radio ads for public lectures (typically 8-12 per year); composing, printing, and distributing the monthly Center newsletter; scheduling and coordinating all Center outreach activities (visits to schools and libraries, planetarium shows, summer workshops, etc.); maintaining financial records for the Center and handling other BASIS tasks; coordinating the summer REU program, including all publicity and correspondence with applicants; coordinating the Center's meteorite identification program; maintaining SPAC student records and payroll; maintaining the Center webpage; and other tasks as requested by Center faculty.

Laboratory Manager – Walter Graupner
Walter has worked for the Center since June 2005 (under the university title of Scientific Research Technologist) and has a wide range of responsibilities in the research laboratories and throughout the building. He constructs, installs, and maintains most of the experimental research equipment used by the majority of SPAC students, including plumbing and electrical service, cryogenic systems, vacuum systems, instrumentation maintenance, servicing of vacuum pumps,

thermal control systems, etc. He manages the day-to-day lab operations and coordinates lab space among the various faculty and students, specifies and purchases lab hardware, etc.

Walter is the radiation safety coordinator for the building, responsible for maintaining radiation safety procedures, signage, and personal dosimeters for personnel using the two rooms in MUSE with radiation sources. He is responsible for general lab safety, maintains the Center's chemical inventory, and maintains the University inventory for equipment allocated to the Center.

He is also the factory-trained technician who services, maintains, and, when necessary, repairs the Center's ICPMS instrument. This is an approximately $700,000 instrument obtained in 2007 which is the cornerstone of the research of faculty member Fangzhen Teng.

2. Center Achievements – 2008-2009

2.1 Awards, Including External Funding

Four of the current research grants listed in Table 1 were awarded this year:

- "Arkansas Galaxy Evolution Survey (AGES)," Dan Kennefick (PI), Julia Kennefick, Claud Lacy, and Mark Seigar, funded by NASA through the EPSCoR program, $503,838.

- "REU Site: Interdisciplinary Research Experience in the Astronomical, Space, and Planetary Sciences," Julia Kennefick (PI) and Derek Sears, funded by NSF, $273,750.

- "Magnesium Isotopic Investigations of Oceanic Basalts and Olivines," Fangzhen Teng(PI), funded by NSF, $175,022.

- "BalloonSat-based Micro Thruster Flight Tests," Adam Huang (PI) and Larry Roe, funded by NASA through the Arkansas Space Grant Consortium, $29,644.

Center faculty received other honors during 2008-2009:

- Dan Kennefick was selected as a fellow of the American Physical Society.

- Alan Mantooth was selected as a Fellow of Institute of Electrical and Electronics Engineers.

- Tim Kral was awarded the Charles and Nadine Baum Faculty Teaching Award for 2009, the university's most prestigious teaching award.

- Claud Lacy received the Fulbright College Master Teacher Award for the 2008-2009 academic year.

2.2 Publications and Conference Presentations

Center faculty and students produced over 35 conference presentations (oral and posters) and 19 journal publications, on work directly related to Center research and the SPAC degree programs, including one paper in *Science.*

Seigar, M. S., D. Kennefick, J. Kennefick, C.H.S. Lacy, Discovery of a relationship between spiral arm morphology and supermassive black hole mass in disk galaxies. *The Astrophysical Journal* (2008), 678: L93-L96.

Teng, F., Dauphas, N., Helz, R., Iron isotope fractionation during magmatic differentiation in Kilauea Iki Lava Lake, *Science*, 20 June 2008: 1620-1622.

Kennefick, J., Infrared imaging of SDSS quasars: Implications for the quasar K-Correction, *The Astronomical Journal* (November 2008).

Teng, F., Lithium isotopic composition and concentration of the deep continental crust, *Chemical Geology* (2008).

Teng, F., Non-traditional fractionation of non-traditional isotopes: Evaporation, chemical diffusion and Soret effect, *Chemical Geology* (2008).

McKay, C.P., C.C. Porco, T.S. Altheide, W.L. Davis, and T.A. Kral, The possible origin and persistence of life on Enceladus and detection of biomarkers in the plume, *Astrobiology*, vol 8, no. 5, 2008.

Chevrier, V., and T. S. Altheide (2008), Low temperature aqueous ferric sulfate solutions on the surface of Mars, *Geophys. Res. Lett.*, *35* (L22101), doi: 10.1029/2008GL035489.

Bryson, K., Chevrier, V., Sears, D.W.G., Ulrich, R., Stability of ice on Mars and the water diurnal cycle: Experimental study of the sublimation of ice through a fine-grained basaltic regolith, *Icarus* (2008), doi:10.1016/j.icarus.2008.02. 011.

Chevrier, V., Ostrowski, D., Sears, D.W.G., Experimental study of the sublimation of ice through an unconsolidated clay layer: Implications for the stability of ice on Mars and the possible diurnal variations in atmospheric water, *Icarus* (2008), doi:10.1016/j.icarus. 2008.03.009.

Chittenden, J.D., Chevrier, V., Roe, L., Bryson, K., Pilgrim, R., Sears, D.W.G., Experimental study of the effect of wind on the stability of water ice on Mars, *Icarus* (2008), doi:10.1016/j.icarus. 2008.01.016.

Seigar, M., A cosmologically motivated description of the dark matter halo profile for the Low Surface Bright-ness Galaxy, Malin 1. *Publications of the Astronomical Society of the Pacific* (PASP), September 2008.

Seigar, M., A.J. Barth, J.S. Bullock, A revised LCDM mass model for the Andromeda Galaxy, *Monthly Notices of the Royal Astronomical Society* (2008).

Wasiak, F., The potential habitable zone on Saturn's moon Enceladus, *Skeptical Inquirer - The Magazine for Science and Reason* (2008).

Hanley, J., V.F. Chevrier, T. S. Altheide, Low Temperature Aqueous Perchlorate Solutions on the Surface of Mars, 40th Lunar and Planetary Science Conference, #1380, The Woodlands, Texas, March 23-27, 2009.

Davis, B.L., V.F. Chevrier, T.S. Altheide, C.Swaffar, Reflectance Spectra of Low-Temperature Chloride and Perchlorate Hydrates and Their Relevance to the Martian Surface, 40th Lunar and Planetary Science Conference, #1387, The Woodlands, Texas, March 23-27, 2009.

Ragland, C., S.A. Bretzius, A.M. Naranjo, T. Thomas, N. Grossman, A.E. Rubin, D.W.G. Sears, Metamorphism of Ordinary Chondrites at the Type-3/Type-4 Boundary, 40th Lunar and Planetary Science Conference, #1122, The Woodlands, Texas, March 23-27, 2009.

Grossman, J.N., A.E. Rubin, D.W.G. Sears, The Mineral Compositions and Class-ification of High Type-3 and Type-4 Ordinary Chondrites, 40th Lunar and Planetary Science Conference, #1679, The Woodlands, Texas, March 23-27, 2009.

Altheide, T.S., V.F. Chevrier, Acidic Weathering of Martian-Relevant Phyllosilicates, 40th Lunar and Planetary Science Conference, #1012, The Woodlands, Texas, March 23-27, 2009.

Ostrowski, D.R., D.W.G. Sears, K.M. Gietzen, C.H.S. Lacy, An Investigation of Phyllosilicates, Chondrites, and C Asterioids Using Continuum Slopes of Near Infrared Spectra, 40th Lunar and Planetary Science Conference, #1136, The Woodlands, Texas, March 23-27, 2009.

Craig, J., D.W.G. Sears, Induced Thermoluminescence Properties of Forsterite and Implications for the History of Primitive Solar System Materials, 40th Lunar and Planetary Science Conference, #1169, The Woodlands, Texas, March 23-27, 2009.

El Shafie, A., R. Ulrich, L.A. Roe, Penetration Forces for Subsurface Regolith Probes, 40th Lunar and Planetary Science Conference, #1205, The Woodlands, Texas, March 23-27, 2009.

Pilgrim, R., R. Ulrich, M. Leftwich, Subsurface Spectroscopic Probe for Regolith Analysis, 40th Lunar and Planetary Science Conference, #1219, The Woodlands, Texas, March 23-27, 2009.

Blackburn, D.G., K.L. Bryson, V.F. Chevrier, L.A. Roe, K.F. White, Sublimation Kinetics of CO2 Ice and Evolution of the Martian Polar Caps, 40th Lunar and Planetary Science Conference, #1339, The Woodlands, Texas, March 23-27, 2009.

Gietzen, K.M., C.H.S. Lacy, D.R. Ostrowski, D.W.G. Sears, Low-Calcium and Calcium-Free Clinopyroxene Spectra and the Implications for UOC Material on Asteroids, 40th Lunar and Planetary Science Conference, #1348, The Woodlands, Texas, March 23-27, 2009.

Gavin, P., V.F. Chevrier, K. Ninagawa, A. Gucsik, S. Hasegawa, Experimental Investigation of the Effect of Meteoritic Impacts on Clays on Mars, 40th Lunar and Planetary Science Conference, #2069, The Woodlands, Texas, March 23-27, 2009.

Androes, D.L., J.C. Dixon, D.L. Zachry, The Evolution of Astronomically Forced Siliclastic Rhythmites of the Ancient Earth and Their Correlation to Banded-Iron Formations, 40th Lunar and Planetary Science Conference, #2323, The Woodlands, Texas, March 23-27, 2009.

Gavin, P., V.F. Chevrier, Thermal Alteration of Nontronite and Montmorillonite: Implications for the Martian Surface, 40th Lunar and Planetary Science Conference, #1027, The Woodlands, Texas, March 23-27, 2009.

Chevrier, V.F., Early Martian Surface Conditions from Thermodynamics of Phyllosilicates, 40th Lunar and Planetary Science Conference, #2515, The Woodlands, Texas, March 23-27, 2009.

Coleman, K.A., J.C. Dixon, Martian Gully Morphologies, 40th Lunar and Planetary Science Conference, #1230, The Woodlands, Texas, March 23-27, 2009.

Altheide, T.S., V.F. Chevrier, J. Denson, C. Nicholson Evaporation of Sulfate and Chloride Brines on the Surface of Mars, 40th Lunar and Planetary Science Conference, #1911, The Woodlands, Texas, March 23-27, 2009.

Blackburn, D.G., R. Ulrich, M.E. Elwood Madden, J.R. Leeman, V.F. Chevrier, Experimental Study of the Kinetics of CO2 Dissociation Under Simulated Martian Conditions, 40th Lunar and Planetary Science Conference, #1341, The Woodlands, Texas, March 23-27, 2009.

Rivera-Valentin, E.G., P. Gavin, K.A. Coleman, J.C. Dixon Liquid Water and Water-Ice Slush Flume Simulations of Gully Synthesis Varying Exit Aperture Diameter, 40th Lunar and Planetary Science Conference, #1355, The Woodlands, Texas, March 23-27, 2009.

Bryson, K.L., D.W.G. Sears, Evaporation Effects on the Formation of Martian Gullies. 40th Lunar and Planetary Science Conference, #1368, The Woodlands, Texas, March 23-27, 2009.

Chevrier, V.F., R. Ulrich, T.S. Altheide, Viscosity of Liquid Ferric Sulfate Solutions and Application to the Formation of Gullies on Mars, 40th Lunar and Planetary Science Conference, #1424, The Woodlands, Texas, March 23-27, 2009.

McHenry, L.J., V.F. Chevrier, C. Schroder, Jarosite in an East African Saline-Alkaline Paleolake Deposit: Implications for Mars, 40th Lunar and Planetary Science Conference, #1635, The Woodlands, Texas, March 23-27, 2009.

Howe, K.L., P. Gavin, T.A. Kral, Methane Production by Methanogens in Perchlorate-Supplemented Media, 40th Lunar and Planetary Science Conference, #1287, The Woodlands, Texas, March 23-27, 2009.

Altheide, T. S., V. F. Chevrier, E. G. Rivera-Valentin (2009) “Modeling the Stability of an Ancient Paleolake in Columbus Crater, Terra Sirenum, Mars” Workshop for Modeling Marian Hydrous Environments, #4030, June 1-3, 2009.

Howe, K. L., E. G. Rivera-Valentin, V. F. Chevrier, J. C. Dixon (2009) “Experimental Simulation of the Effect of Viscous Fluids on Martian Gully Forms” Workshop for Modeling Marian Hydrous Environments, #4024, June 1-3, 2009.

Rivera-Valentin, E. G., V. F. Chevrier, and R. Ulrich (2009) “Time Dependent Model for Heat Transfer and Water Vapor Diffusion/Adsorption at the Phoenix Landing Site” Workshop for Modeling Martian Hydrous Environments, #4020, June 1-3, 2009.

Altheide, T.S., V. Chevrier, C. Nicholson, J. Denson, 2009. Experimental investigation of the stability and evaporation rate of sulfate and chloride brines on Mars. *Earth Planet Sci. Lett.*, in press.

Chevrier, V., R. Ulrich, T.S. Altheide, 2009. Viscosity of ferric sulphate solutions and application to the formation of gullies on Mars. *Journal of Geophysical Research*, 114(E060001), doi: 10.1029/2009JE033376.

Kennefick, D. Testing relativity from the 1919 eclipse-a question of bias. *Physics Today*, *62*(3), 37-42.

Chevrier, V.F., J. Hanley, T.S. Altheide (2009), Stability of perchlorate hydrates and their liquid solutions at the Phoenix landing site, Mars, *Geophys. Res. Lett.*, *36*, L10202, doi:10.1029/2009GL03 7497.

Coleman, K.A., J.C. Dixon, K.L. Howe, L.A. Roe, V. Chevier (2009), Experimental simulation of martian gully forms, *Planetary and Space Science*, *57*, 711-716.

Ulrich, R. (2009), Modeling diffusion advection in the mass transfer of water vapor through martian regolith, *Icarus*, *201*(1), 127-134.

Androes, Dixie L., Zachry, Doy L., and Dixon, J. (2009). Anomalous silcrete in Eocene strata on the flanks of Crowley's Ridge, Mississippi Embayment, Paper 13-24, South-Central Section - 43rd Annual Meeting, March 2009.

Kashyap, A.S., M. Mudholkar, H.A. Mantooth, T. Vo, and M. Mojarradi, “Cryogenic Characterization of Lateral DMOS Transistors for Lunar Applications,” IEEE Aerospace Conference, March 7-14, 2009.

Androes, Dixie (2009). Reconstruction of lunar orbital periodicities and their impact on tidal sediments and early life, Presentation 305.01, American Astronomical Society 214th Meeting, June 2009.

Chevrier, V. Early martian surface conditions from thermodynamics of phyllosilicates. Martian Phyllosilicates: Recorders of Aqueous Processes, Abstract #7011, Paris, France, October 21-23, 2008.

Altheide, T.S., V. Chevrier, P. Gavin. Acidic weathering of martian relevant phyllosilicates. Martian Phyllosilicates: Recorders of Aqueous Processes, Abstract #7007, Paris, France, October 21-23, 2008.

Gavin, P., V. Chevrier, K. Ninagawa. Effects of Impact and Heating on the Spectral Properties of Clays on Mars. Martian Phyllosilicates: Recorders of Aqueous Processes, Abstract #7012, Paris, France, October 21-23, 2008.

Chevrier, V., K. Bryson, L.A. Roe, D.G. Blackburn, K.F. White. Sublimation Kinetics of CO_2 Ice and Evolution of the Martian Polar Caps. The Mars Atmosphere: Modeling and Observations, Abstract #9073, Williamsburg, Virginia, November 10-13, 2008.

Sears, D.W., K. Gietzen, D. Ostrowski, C. Lacy, V. Chevrier, "Primitive Materials on Asteroids," 40th DPS Meeting, Ithaca, NY, October 10-15, 2008.

Bryson, K., V. Chevrier, L. Roe, K. White, and D. Blackburn, The Sublimation Rate of CO_2 under Simulated Mars Conditions and the Possible Climatic Implications," 40th DPS Meeting, Ithaca, NY, October 10-15, 2008.

3. Achievements of Students and Alumni – 2008-2009

3.1 Achievements of Current SPAC Students

- Adam Hughes was selected as one of 50 students to serve as a student ambassador for the NASA International Year of Astronomy program. He will be bringing a traveling exhibit of Hubble Space Telescope images to the campus this Fall.

- Kate Coleman and Adam Hughes were selected as GK-12 Fellows for the 2009-2010 academic year. This program matches graduate students in the sciences and engineering with sixth and seventh grade teachers in local Arkansas school districts.

- David Blackburn is currently (Summer 2009) participating in an internship at JPL, analyzing data returned from the Cassini mission to Saturn.

- Fata Sedaghatpour completed an internship under Dr. Karen Theis at the University of Manchester in Spring 2009.

3.2 Achievements of Space Center Alumni

- Melissa Franzen Jones (PhD SPAC 2006) is a member of the Mission Design Group at the Jet Propulsion Laboratory in Pasadena, California. She was selected to give the 2009 commencement address at her alma mater, Loras College.

- Julie Chittenden (PhD Chemistry 2006) is currently working as a researcher at the NASA-Ames Research Center in California.

- Katie Bryson (PhD SPAC 2008) has accepted a position as a post-doctoral researcher at NASA-Ames Research Center.

- Lisa Billingsley (MS SPAC 2007) is currently enrolled in the graduate program at the University of Oklahoma.

Cell and Molecular Biology

The Graduate Program in Cell and Molecular Biology (CEMB) currently has 82 faculty (9 new faculty were added this year). Dr Douglas Rhoads continues as program director completing his third year and, based on a poll of the faculty, has begun a second term as of May 18, 2009.

The program anticipates being approximately $10,000 over budget for the 2009 fiscal year. We currently project for FY2010 expenditures of $133,000 for research assistantship support, on a budget of $116,000, which could result in a cost overrun of $17,000.

The program continues to grow in faculty, and maintain a relatively constant population of graduate students. Since many of the graduate students are supported on grants or departmental assistantships (not program), the size of the graduate student population cannot grow without new grants, which is not likely during this economic downturn. Despite these dire economic times, the faculty and students have been productive in obtaining grants, publishing articles, presentations at national meetings, and recognition of research accomplishments.

Plans for the coming year are to maintain the program, evaluate student progress, and refine program operating procedures.

Students Completed in FY2009	MS: 0 PhD: 6	
Students Admitted	MS: 0 PhD: 13	
Students in process of admission	MS: 4 PhD: 7	
Current Student Population	MS: 3 PhD: 52	
	Male: 21	Female: 34
	US: 16	International: 39

Departmental Distribution of Students

Department	MS	PhD
ANSC		
BAEG		7
BISC	2	13
CHEG		2
CHBC	1	7
CSES		6
ENTO		1
FDSC		1
PLPA		5
POSC		12
Total	3	52

Noncompetitive funding renewal

Bacterial Artificial Chromosome (BAC) clone for infectious laryngotracheitis virus (ILTV). Animal Health Project, Arkansas Agricultural Experimental Station. 10/01/2006-9/30/2007. $12,500. P.I. B-W. Kong

Biosensor for Rapid, Sensitive and Specific Detection of Avain Influenza Virus H5N1 USDA/NRI #2008-35204-18662) 11/2007 – 10/2009–$375,000 Y. Li (PI), B. Hargis, S. Tung and L. Berghman

Center for Protein Structure and Function NIH/COBRE Year 4; ~$8,000,000. total (9/05–8/10) F. Millett (PI). Subproject title: Protein Targeting. Subproject year 4 funding $110,000 Robyn Goforth, (PI); Ralph Henry, (Project Mentor).

Development of an immortalized chicken cell substrate for infectious laryngotracheitis virus (ILTV) propagation for vaccine production.US Poultry & Egg Association. 7/01/2007-6/30/2009. $110,000. P.I. B-W. Kong

Efficient Bioseparation by Intertwining Strain, Chromatography, and Affinity Tail Design. NSF Year 3, $494,602 total (05/06 – 04/09) PI, Bob Beitle; Ralph Henry, CoI.

Evaluation of six chromosomal regions as QTLs for sperm traits negatively affecting male fertility in Cobb broiler breeders. Cobb Vantress, Inc; $31599; 10/07-8/08; DP Froman, DD Rhoads (PI)

Exploration of DNA-Based Nanoscale Building Block (DNAnBLOCK) for Controllable and Scalable Fabrication of Active Nanostructures, NSF, 07/15/2007-07/14/2009, $115,000, PI: JW Kim, Co-I: R Deaton

Fibroblast growth factor signaling. Center for Protein Structure and Function NIH/COBRE (9/05–8/10) F. Millett (PI). Subproject year 4 funding $90,000 T. K. S. Kumar.

Function of Cell Identity Factors in Tissue-Specific Programmed Cell Death NSF # 0641347 05/01/07 - 04/30/10 $ 330,000 (PI: Michael Lehmann)

Gold-Coated Carbon Nanotube Mediated Nanophotothermolysis as Noninvasive Anticancer Therapeutic, 07/01/2006-06/30/2009, $199,175, PI: JW Kim

Identification and characterization of anti microbial peptides in the egg. ABI N. Rath (Co-PI) $24,058.

Identification of virus encoding microRNA for infectious laryngotracheitis virus (ILTV). Research Incentive Grants, Arkansas Agricultural Experimental Station. 7/01/2008-12/31/2009. $10,000. P.I. B-W. Kong

Large-Scale DNA Associative Memories, NSF, 07/01/2005-06/30/2009, $316,419, PI:R Deaton, Co-I: JW Kim

Magnetic nanoparticle microfluidics for high efficien capture, separation and concentration of foodborne pathogens NSF/STTR 7/2008 – 6/2009 $150,000–Y. Li (PI for university) and A. Wang (PI for company)

Pathogenesis of Candida NIH R01 AI 051470-01A1 7/01/03-12/31/07 no cost extension for another year 12/31/08 Total costs: $1,077,206 Annual direct costs: $175,000 P.I. D. McNabb, Collaborator: Durdik

Protein Targeting to the Chloroplast Thylakoid Membrane: Structure of a chloroplast signal recognition particle;*Department of Energy* (DOE); $450,000 total for 3 years (8/07 - 7/10) R Henry (PI). CoI: T.K.S Kumar, Robyn Goforth.

Pulmonary Arterial Hypertension: Avian Model of Complex Vascular Lesion Development; NIH R15; $150,000; 4/08-3/10; N Anthony, G Erf, DD Rhoads, R Wideman (PI)

Quantitative Biocompatibility of Implanted Materials. NIH RO1 EB001441-05A1; $800,000; 7/1/07-6/30-11 PI: J. Stenken

Ralph E. Powe Junior Faculty Enhancement Award to Yuchun Du from Oak Ridge Associated Universities (ORAU) Consortium; $10,000, May, 2008.

Recombinase-Mediated Targeted Gene Integration and Excision for Marker-free Transgenic crops. USDA-CSREES Year 3, $324,137 total (09/06 – 08/09) PI: V. Srivastava.

The Control of Growth and Metabolism by Effectors of the TOR Signaling Pathway. NIH 1R15DK079277-01, 08/09/07 - 07/31/10, $ 150,000, PI: Michael Lehmann

Undergraduate Research Center in Nanobiology..*Howard Hughes Medical Institute* Year 2: $1,500,000 total. (9/06 – 8/10) PI: Don Bobbitt; CoIs: G Salamo, R Koeppe, D Paul, and R Henry

Unraveling Epigenetic Mechanisms of Gene Expression for Agricultural and Medical Applications. ABI, V. Srivastava (PI), $74,000.

Validation of an animal model for human pulmonary arterial hypertension. Arkansas Biosciences Institute; $74,610; 7/07-6/08; coPIs: N Anthony, G Erf, R. Wideman, PI: DD Rhoads.

Competitive new grants

A comprehensive approach to assessing soybean varieties for chloride toxicity. $60,682. Arkansas Soybean Research and Promotion Board. PIs: Korth, Chen and Cartwright.

Acquisition of a Shared Use Real Time PCR System. Arkansas Biosciences Insitute; $73,800; 7/08-6/09; PI. PI: DD Rhoads, CoPIs: Du, Etges, Lehmann, McNabb, Pinto Silberman.

Cell biology of T lymphocyte aging pharmacological vaccine adjuvants: analysis of immune responses to vaccines NIH R03 AI070312-01A2; $142,000; 7/1/09-6/30/11; PI: J. Durdik

Evaluation of six sperm mobility QTLs in Cobb lines. Cobb-Vantress, Inc; $34,800; 3/09-1/10; PI: D. Rhoads

Evolutionary dynamics of weedy rice; USDA-CSREES NRI-CGP, 2009-2011, $399,963; PI: N. Burgos

Genetic Analysis of QTLs affecting Ascites; Arkansas Biosciences Institute; $84000; 7/08-6/10; PI: N. Anthony , CoPIs: Erf, Rhoads and Wideman

Intrinsic Tilt of Transmembrane Helices, NSF 0841227 $580,293; 07/01/2009 – 06/30/2012. RE. Koeppe II PI: DV Greathouse

Point Source Ozonation to Minimize Antibiotic Resistance, NIH-STTR II (Subcontract through BlueInGreen), 05/01/2008-04/30/2010, $250,000, PI: JW Kim

Proteomic and biochemical studies of Bax regulatory proteins in apoptosis. NIH, $204,387;09/01/2008 – 8/31/20012; PI: Y Du.

Role of Ascorbate in Mitigating ER and Cellular Stress Associated with Transient and Stable Plant-Based Protein Production. NSF-EPSCoR, $75,953 total; (05/08 – 04/10); PI: V. Srivastava

Smoking, thrombomodulin oxidation, and thrombosis; NIH, NHLBI, R-15; 4/1/2009-3/31/2010; $150,000; PI: W. Stites

The Role of Higher-Order Chromatin Structure in Gene Regulation. Arkansas Biosciences Institute; $ 69,858; 7/08-5/09; PI: M. Lehmann

Peer-reviewed Publications

Ananthamurthy, K., K. M. Kathir, A. Kight, R. Goforth, R. Henry and T. K. S. Kumar (2008) 1H, 15N, and 13C resonance assignments of the C-terminal domain of the 43 kDa subunit of the chloroplast signal recognition particle. Biomolecular Resonance Assignments, 2, 37-39.

Daily, A. E., Greathouse, D.V., van der Wel, P.C.A and R.E. Koeppe II (2008) Biophys. J. 94, 480-491. Helical distortion in tryptophan and lysine anchored membrane-spanning alpha helices as a function of hydrophobic mismatch: A solid-state deuterium NMR investigation using the GALA method.

Hesse, JE, Matthew F. Faulkner and Jeannine M. Durdik. (2009)Increase in double-stranded DNA break-related foci in early-stage thymocytes of aged mice Experimental Gerontology (in press.)

Holt, A., de Almeida, R., Nyholm, T., Loura, L., Daily, A., Staffhorst, R., Rijkers, D., Koeppe, R.E., II, Prieto, M., and J. A. Killian (2008) Biochemistry 47, 2638-2649. Is there a preferential interaction between Cholesterol and Tryptophan residues in membrane proteins?

Kannan L, Rath NC, Liyanage R, Lay, J. O Jr., 2009. Direct screening identifies mature beta-defensin 2 in avian heterophils. Poult Sci. 88(2):372-9.

Marty, NJ, R Dakshinamurthy, AD Kight, NE Lewis, D Fologea, TKS Kumar, RL Henry, RL Goforth (2009). The membrane-binding motif of chloroplast signal recognition particle receptor (cpFtsY) regulates GTPase activity. J. Biol. Chem 284(22), 14891-14903

Navia-Giné, W. G., Yuan, J.S., Mauromoustakos, A, Murphy, J.B., Chen, F. & Korth, K.L. (2009) Medicago truncatula (E)-β-ocimene synthase is induced by insect herbivory with corresponding increases in emission of volatile ocimene. J. Plant Physiol. Biochem. 47:216-425.

Navia-Giné, W.G., Gomez, S.K., Yuan, J., Chen, F., Korth, K.L. (in press) Insect-induced gene expression at the core of volatile terpene release in Medicago truncatula. Plant Signal. Behav.

Rajalingam, D., K. M. Kathir, K. Ananthamurthy, P. D. Adams and T. K. S. Kumar. An efficient method to prevent degradation of recombinant proteins by Thrombin (2008). Anal. Biochem., 375, 361-363.

Sales, M. A., V. K. Shivrain, N. R. Burgos, and Y. I. Kuk. 2008. Amino acid substitutions in the acetolactate synthase gene of red rice confer resistance to imazethapyr herbicide. Weed Sci. 56:485-489.

Vostrikov, V. V., Grant, C. V., Daily, A. E., Opella, S. J. and R. E. Koeppe II (2008) J. Am. Chem. Soc., 130, 12584-85. Comparison of "Polarization Inversion with Spin Exchange at Magic Angle" and "Geometric Analysis of Labeled Alanines" Methods for Transmembrane Helix Alignment.

Wang Y., Shan C., Ming S., Liu Y., Du Y., and Jiang G. (2009) Immunoadjuvant effects of bacterial genomic DNA and CpG oligodeoxynucleotides on avian influenza virus subtype H5N1 inactivated oil emulsion vaccine in chicken. Res Vet. Sci. 3:399-405.

Peer reviewed publications submitted or in press

Kannan L, Rath N.C, Liyanage R, Lay J.O Jr. Evaluation of beta defensin 2 production by chicken heterophils using direct MALDI mass spectrometry (Submitted to Molecular Immunology).

Nicholson, S.J., Srivastava, V. Transgene constructs lacking transcription termination signal induce efficient silencing of endogenous targets in Arabidopsis. Mol Genet. Genom. (in press).

R. Liyanage, N. Devarapalli, L. M. Puckett, N. H. Phan, J. Gidden, W. E. Stites, and J. O. Lay, Jr. "Comparison of Two ESI MS Based H/D Exchange Methods for Extracting Protein Folding Energies " Int. J. Mass Spectrom. (in press)

Rath, NC, NB Anthony, L Kannan, WE Huff, GR Huff, HD Chapman, GF Erf, P Wakenell. Evaluation of ovotransferrin as a nonspecific marker of health problems in chickens. Accepted 6/7/09).

Presentations

Akbudak, MA, V. Srivastava. Marker-free site-specific gene integration technology. Plant and Animal Genome, San Diego, CA, Jan 2009

Ananthamurthy, K, KM Kathir, A. Kigt, RL Goforth,, R Henry, and T. K. S. Kumar. 3D solution structure of the C-terminal chromodomain of the chloroplast signal recognition particle and its interaction with the cpSRP-peptide. Poster presented at the 53rd Annual Biophysical Society Meeting held in Boston, MA Feb. 28 – March 4, 2009.

Ananthamurthy, K, KM Kathir, R Goforth, R Henry, and T. K. S. Kumar. Understanding the system that feeds the world: my tryst with protein and NMR. Poster presented in the Abstract to Contract – Graduate Research Symposium conducted by the UARK graduate school. Feb., 20, 2009, UARK, Fayetteville. (Won the best poster award).

Brown, TR, JH Kim, Y Li, AE Daily, RE. Koeppe II, B Roux, OS. Andersen (2009) Biophysical Society 53rd Annual Meeting, Boston, MA. Abstract L263. Ion Permeation through Ala->Ser Substituted Gramicidin A Channels.

Dawoud, T, P. Hererra, I. Hanning, Y.M. Kwon, and S.C. Ricke. 2009. In vitro invasion of laying hen ovarian follicles by Salmonella Enteritidis. 109th American Society for Microbiology General meeting, Philadelphia, PA.

Froyd-Rankenberg, JM, DV. Greathouse, RE. Koeppe II (2009) Biophysical Society 53rd Annual Meeting, Boston, MA. Abstract 2350. Half-Anchored WALP Peptides: Effect Of Anchor Position On Peptide Orientation.

Kannan, L; R Liyanage; NC Rath; JO Lay "Stable isotope free direct MALDI-MS quantitation of beta defensin 2 regulated by TLR activation in chicken heterophils" at the 57thannual meeting of the American Society of Mass Spectrometry, Philadelphia, PA

Kannan, L; R. Liyanage; J. O. Lay, Jr; N.C. Rath. Stable isotope free direct MS quantitation of beta defensin 2 regulated by TLR activation of chicken heterophils" the 11th annual competition sponsored by Gamma Sigma Delta Honor Society, University of Arkansas Fayetteville, AR, Feb 2009.

Kannan, L; R. Liyanage; J. O. Lay, Jr; N. C. Rath. Regulation of Thymosin β4 in Chicken Macrophages by Toll-Like Receptor Activation" at the 97th annual meeting of the Poultry Science Association, Niagara Falls, Canada. (Poster)., July 2008.

Kannan, L; R. Liyanage; J. O. Lay, Jr; N. C. Rath. "Identification and characterization of chicken egg white peptide" at the 2nd Annual Graduate Research Symposium sponsored by Career Development Centre, University of Arkansas Fayetteville, AR, Feb 2009

Kannan, L; R. Liyanage; J. O. Lay, Jr; N. C. Rath. "Identification and Partial Characterization of a Novel Egg White Peptide" at the Arkansas Biosciences Institute 2008 Symposium, Little Rock, AR. (Poster), October 2008.

Kannan, L; R. Liyanage; J. O. Lay, Jr; N. C. Rath. "Screening and identification of an egg white peptide by mass spectrometry" the 11thannual competition sponsored by Gamma Sigma Delta Honor Society, University of Arkansas Fayetteville, AR. (Poster), Feb 2009.

Kim, JN, and Y.M. Kwon. (2009). Phenotypic and genetic characterization of RyhB-regulon in Salmonella. 109th American Society for Microbiology General meeting, Philadelphia, PA.

Lee, JS, J.J. Song, R. Deaton, and J.-W. Kim. 2009. "Exploring the Potential of Microarray Technology for Bio/Nano Sensing," IEEE International Conference on Nano/Micro Engineered and Molecular Systems (IEEE-NEMS), Shenzen, China.

Lee, JY, Song JJ, Zhou H, and Kong BW. Differentially expressed genes of host-virus interactions by infectious laryngotracheitis virus infection in clutured lung cells. 2009. Poultry Workshop in Plant and Animal Genomics Conference. San Diego, CA.

Lee, JY, Wooming A and Kong BW. Comparison of primary chicken embryo cells for propagation of infectious laryngotracheitis virus (ILTV). 2008. Annual Meeting of Poultry Science Association. Niagara Falls, Ontario, Canada

Lehmann, M, C. Cao, Y. Liu. Fork Head and Steroid Hormone Cooperate in the Timing of Autophagic Developmental Cell Death in Drosophila. XX International Congress of Genetics, Berlin, Germany, July 2008.

Liyanage, R; N Devarapalli; LM. Puckett; NH Phan; JA Starch; J Gidden; WE Stites; JO Lay, "Protein Equilibrium Population Snapshot (PEPS) MS method for Measuring Protein Folding Energies using H/D exchange and Oxidation of Methionine" at the 57th annual meeting of the American Society of Mass Spectrometry, Philadelphia, PA

Marty, NJ, D. Rajalingam, A. D. Kight, N. E. Lewis, D. Fologea, T. K. S. Kumar, R. L. Henry, R. L. Goforth. (2009) Membrane Partitioning and Activity of Chloroplast Signal Recognition Particle Receptor (CpFtsY) Relies on a Conserved Lipid Binding Motif. Presented at the ASBMB, April 2009 (New Orleans, LA).

Mazzanti, CL, DV. Greathouse, JF. Hinton, JD. Lemmons, RE. Koeppe II (2009) Biophysical Society 53rd Annual Meeting, Boston, MA. Abstract 2342. Conformation of the Transmembrane Domain of the Anthrax Toxin Receptor.

Rangani, G, V. Srivastava. Role of chromatin modifiers in exonic methylation-mediated transcriptional silencing of Arabidospis phyA' epiallele. Plant and Animal Genome, San Diego, CA, Jan 2009

Rath, NC; L. Kannan; W. E. Huff; G. R. Huff; N. B. Anthony; G. F. Erf; H. D. Chapman "Identification of Peptide Biomarkers: a Case Study with Avian Heterophils" at the NE1016 Genetic Basis of Disease Resistant in Poultry, University of Guelph, Ontario, Canada, October 2008.

Sales, MA, N. R. Burgos, B. D. Reyes, V. K. Shivrain, and K. Y. Yun. 2008. Genome-wide analysis of the nitrogen stress transcriptome of red rice (Oryza sativa L.). Abstracts 5th International Weed Science Congress, June 23-27, 2008. Vancouver, Canada. p.305. Invited presentation. IWSC Best Paper Award

Smith, CD, A. Al-Rubaye, N.B. Anthony, G.F. Erf, R.F. Wideman, D.D. Rhoads. An Evaluation of Chromosomal Regions Contributing to Idiopathic Pulmonary Arterial Hypertension and Development of Ascites in the Chicken. Plant and Animal Genome, San Diego, CA, Jan 2008

Wideman, RF, K. Hamal, M. Bayona, A. Lorenzoni, D. Cross, D. Rhoads, G. Erf, N. Anthony. Complex Vascular Lesions in the Lungs of Domestic Fowl Selected for Susceptibility to Pulmonary Arterial Hypertension: Incidence and Histology. Experimental Biology, New Orleans, LA April 2009

Yu, H, T. Whitfield, SY Noskov, CL. Mazzanti, RE. Koeppe II, OS. Andersen, B Roux (2009) Biophysical Society 53rd Annual Meeting, Boston, MA. Abstract 3408. Development of a Drude Polarizable Force Field for Ion-water and Ion-NMA Interactions and Application to Selectivity in Ion Channels.

Research Recognition Awards (selected)

Naomi Marty: the publication by Marty et. al. was recognized by Journal of Biological Chemistry as being in the top 1% of papers published by JBC. Recognition included a separate summary written by the editor, which accompanied the publication by Marty et. al. Also included at the JBC website is an author profile that includes a picture of Naomi Marty.

Marites Sales received the first Larry Burrill Outstanding Young Scientist Award (2008) from the International Weed Science Society for her research paper. This award came with a $2,000 travel grant, to orally present her research at the International Weed Science Congress (IWSC) on June 27, 2008, Vancouver, Canada.

Lakshmi Kannan selected as Dale Bumpers Distinguished Doctorate Scholar for 2009 in the Dale Bumpers College of Agricultural, Food and Life Sciences, University of Arkansas Fayetteville, AR.

Lakshmi Kannan awarded First Place in the Oral presentation at the 11th annual competition sponsored by Gamma Sigma Delta Honor Society, University of Arkansas Fayetteville, AR Feb 2009.

Lakshmi Kannan awarded Second Place in the poster presentation at the 11th annual competition sponsored by Gamma Sigma Delta Honor Society, University of Arkansas Fayetteville, AR Feb 2009.

Lakshmi Kannan received a Student Travel Award from Arkansas Biosciences Institute (ABI) to participate and present in the ABI Fall Research Symposium, Little Rock, AR Oct 2008.

Lakshmi Kannan awarded Certificate of Excellence for outstanding presentation in the immunology section at the 97th Annual Meeting of the Poultry Science Association, Niagara Falls, Canada July 2008.

Student Placement

Naomi Marty (PhD 2009) will begin a postdoctoral in September 2009 at University of Guelph (Guelph, Ontario) with Dr. Robert Mullen studying membrane localization of tail-anchored proteins.

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Office for the Studies on Aging

The Office for the Studies on Aging (OSA) was established in August 1999 to explore educational, community service, and research issues and needs related to aging and older persons. The mission of the OSA is to coordinate university resources to address gerontology needs and to facilitate better community interface between university resources and the needs of older adults.

In its tenth year of operation, the Office for Studies on Aging has continued to be proactive in reaching out to the university community and into Northwest Arkansas to identify needs and to target resources that may respond to those needs.

In the spirit of the mission of the OSA, the following initiatives were completed this year.

Campus and Community Collaborations

- Collaborated with the College of Education & Health Professions Dean's Office to host a reception honoring the 4th Annual Aging Well Creative Writing Contest Award Recipients on December 4, 2008.
  - 1st prize: Arianna Goodman, Student
  - 2nd prize: Susanna Hicks, Staff
  - 3rd prize: Meaghan Mulholland, Graduate Student
- The Office for Studies on Aging received $10,500 from the Women's Giving Circle in 2008-2009 to host a series of workshops for caregivers about physical and mental health topics. Workshops were held at the Clarion Inn, Fayetteville.
  - June 24, 2008: Aging Parents: Will I Be Ready? and 5 Wishes
  - September 16, 2008: From Independent Living to Total Care: Making the Right Decision featuring Dennise Plooyea, LCM, Jerry Mitchell, Director of AAA, Melissa Rogers, LMSW, and Alison Cothran, RN, MSN
  - October 21, 2008: When Roles Reverse: Panel Presentation featuring Dr. Gillian Woods, Patricia Poertner, LSW, and Susan Ang

- Continuation of collaboration with Area Agency on Aging and facilitation of interactive projects involving University and AAA.
- Established an internship sit at Butterfield Trail for two interns (Fall & Spring). Interns were responsible for developing and maintaining exercise programs for the residents.
- Established two graduate assistants at the Rogers Adult Wellness Center. Graduate assistants were responsible for promoting health and wellness, maintaining exercise programs, and developing health-related programs for the members.
- Established a graduate assistant at Washington Regional Medical Center, Center for Exercise. Graduate assistant promoted the "Lighten Up" program and promoted health and wellness for the members.
- Co-Directors represent OSA and College of Education and Health Professions on Gerontology Certificate Steering Committee.

Current Research

- The Office for Studies on Aging focused research on certified nursing assistants (CNAs) as caregivers through focus groups in four local assisted living, long term care, and nursing home facilities in Northwest Arkansas.
    - November 14, 2008: Butterfield Trail Village, Fayetteville, AR
    - February 13, 2009: Homestyle Assisted Living, Springdale, AR
    - April 10, 2009: City Hospital, Fayetteville, AR
    - April 17, 2009: North Hills Rehabilitation, Fayetteville, AR
- The Office for Studies on Aging sent out surveys to both administrators and CNAs at 238 long term care facilities in Arkansas focusing on CNA training and hierarchy at the workplace.
- The OSA conducted a focus group at Butterfield Trail Village to focus on the needs of residents according to the residents.

Development Efforts

- The Office for Studies on Aging received a fourth $5000 donation from Mr. & Mrs. Bob Garnett (December 2008). A total of $2000 of this donation was used for the 4th Annual Aging Well Writing Contest to be held in Fall 2008.

Funding

- Shadden, B.B. (2008). Scottish Rite – RiteCare Child Language Program. $7,000. Funded.
- Shadden, B. B., & DiBrezzo, R. (2008). Bob and Louise Garnett Grant to Office for Studies on Aging. $3,000. Funded.
- Shadden, B.B. (December 2008). Gift from Charles and Clydene Scharlau for the Speech and Hearing Clinic. $5,000. Funded

Grants

- Devareddy, L., Di Brezzo, R. (2008-11). Role of Anti-Oxidants Rich Berries in Prevention of Bone Loss in Postmenopausal Women. $120,000. ($45,000 for first year)
- Alzheimer's Association
- American Federation on Aging

Submitted

- Di Brezzo, R., Leszczak, T., Evanson, K. (2008). Bone Health for Underserved Women. Northwest Care Foundation. $15,227. (unfunded)
- Di Brezzo, R., Evanson, K., Leszczak, T. (2008) Relationship Between Exercise and Bone Health. Women's Giving Circle. (unfunded)

Gerontology Certificate

As an outgrowth of the graduate certificate in gerontology and of increased campus interest in policy studies in aging, the graduate certificate steering committee worked with Dean Koski and Dr. Brinck Kerr and Dr. Valerie Hunt to develop and obtain approval for an Aging Studies area of concentration in the Public Policy Ph.D. program. There are plans to discuss the viability of the graduate certificate in gerontology, particularly in light of the Ph.D. concentration area that has been developed.

- There was one gerontology certificate graduate this year: Marj Yancey.

Abstracts

- Di Brezzo, R., Fort, I., Glave, A.P., & Acuff, M. (2008). The Effects of a 12-week exercise program on functional strength, fitness, and memory. ACSM Central States Procedures, 47.
- Leszczak, T., Di Brezzo, R. (2008). Balance Measures using the biodex balance system in physically active and non-active women. ACSM Central States Procedures, 31
- Gray, M. Di Brezzo, R., Fort, I., Lirgg, C., Riggs, C., Shadden, B. (2008). Effect of power and resistance training on bone mineral density. Research Quarterly for Exercise and Sport; Research Consortium Abstracts Supplement, 70 (1), A- 22.

Presentations – Invited

- Di Brezzo, R., Shadden, B. (2008). The Role of Exercise in Bone Health. Butterfield Trails. Fayetteville, AR.
- Powers, M., Gray, M., Di Brezzo, R., Shadden, B. (2008). Bone mineral density and percent body fat of caregivers and Non-caregivers. Central States Chapter of the American College of Sports Medicine, Springfield, MO.
- Shadden, B. B. (September, 2008)./ Adult neurogenic communication disorders: Understanding and managing their negative impact onone's sense of self. Three hour presentation at the Annual Convention of the Oklahoma Speech-Language-Hearing Association, Broken Arrow, OK.
- Shadden, B. B. (February, 2008). "Focusing on Life Stories and Narrative Self in Managing Neurogenic Communication Disorders." Three hour presentation at the Annual Convention of the Speech-Language Hearing Association of Alabama, Auburn, AL.
- Shadden, B. B. (April, 2008). The insider's perspective: Life is larger than aphasia. Worskhop presented by the Barnes Jewish Hospital Foundation in St. Louis, MO. Presentation in morning for people with aphasia and their significant others. Presentation in the afternoon for speech-language pathologists and other health care professionals.
- Di Brezzo, R. (2008). Countdown to retirement: Aging well in retirement. Human Resources, University of Arkansas.

Presentations – Submitted and Accepted

- Powers, M., Fort, I., Di Brezzo, R. & Shadden, B.B. (2008). Effect of resistance training on cognitive function in older women. Program No. 295-5. 2008 Abstract Viewer. National Harbor, MD: The Gerontological Society of America.

Books – Authored

- Shadden, B. B., Hagstrom, F., & Koski, P. (2008). Neurogenic Communication Disorders: Life Stories and the Narrative Self. San Diego, CA: Plural Publishing.

Chapters – Authored

- Shadden, B. B., & Hagstrom, F.H. (2008). Clinical assessment of language difficulties. In F. T. L. Leong (Ed.), Encyclopedia of Counseling. San Diego, CA: Sage.
- Turner, L., Hunt, S., Di Brezzo, R., Jones, C. (in press). Design and Implementation of an Osteoporosis Prevention Program Using the Health Belief Model. In: Introduction to Health Behavior Theory. Sudbury, MA: Jones and Bartlett Publishers.

Service Activities of Co-Directors

- ALS Support Group – serve as facilitator for all monthly group meetings. Meets the information and support needs of persons with ALS and their families.
- ALS Association – Chair of Patient Care Services Committee for the local chapter of ALSA (2005).
    - Ongoing development of Loan Closet (now have 6 augmentative communication devices housed a the UA Speech Clinic)
    - Technology support services for persons with ALS – involves evaluating technology needs, including travel to the home for those who cannot physically be transported to our clinic.
- Stroke Support Group of NWA – founder and facilitator of stroke support group which meets monthly in Rogers, AR.
- Regional Representative, National Aphasia Association – respond to concerns of residents in Arkansas and surrounding states.
- Area Agency on Aging – consultation and coordination of shared projects
- Reflections Memory Care, Inc. Board Member, 2006 to June 2008. This organization was formed to create a unique residential and treatment facility for older adults with dementia in the Springdale level. The economy has put this initiative on hold for now.
- Statin Effects Study Advisory Board, funded by Robert Woods Johnson Foundation gift to the University of California San Diego.(through March 2008)
- Four workshops and/or in-service training sessions to community groups (not including those presented as part of Women's Giving Circle grant)
- Member of three committees of national/international professional organizations

Biotechnology Center

The Biotechnology (Biomass) Center is the home for the University of Arkansas Herbarium. Offices for museum personnel are located in the Center as is the curation laboratory.

The Center continues to house the food safety research efforts of Professor Michael Johnson of the Department of Food Science as well as the Agricultural Research Services Laboratories and Offices. It also houses Genesis clients on occasion.

University of Arkansas Press

Bucking the trend of fellow university presses, sales were up again in FY2009. Gross sales were flat while our returns–often the scourge of the industry–were down (and way down compared to industry wide figures.)

As has been the recent pattern, sales have been solid in all categories: front list, backlist, clothbound, paperbound, trade book (general interest) and, especially, classroom adoption sales. Especially notable–in sales booked and sales not booked–is *An Arkansas History for Young People*, 4th edition. Our leading book and the driver of sales increases over last year, it was , at the same time, our biggest sales disappointment. Due to rancorous political battles in the State Department of Education regarding the teaching of Arkansas History, sales were nowhere near as robust as in previous adoption cycles. This remains our biggest "property," however, and we are working on strategies to recoup and to be prepared for the next adoption cycle.

Noteworthy is the "new" income category of distributed presses. Revenue from the poetry contest was quadrupled due to the announcement of our forthcoming $5,000 poetry prize. We expect this revenue source to continue to increase for a few years as we make our poetry contest better and better known. The revenues collected from the entrance fees will soon cover all the expenses of the poetry publishing program, with sales going straight to the bottom line. Also new to Press business is our taking on "client services" *in re* DVD development and marketing. Especially notable in this category are: *Silas Hunt: A Documentary*, produced by The University of Arkansas School of Continuing Education and Academic Outreach and *The Buffalo Flows: The Story of Our First National River*, produced by Larry Foley for the Department of Journalism. This documentary has been aired locally by AETN and will be broadcast nationally by PBS this fall.

Expense management remains a positive feature of Press operations. Overall expenses increased due to (long overdue) staff promotions and additions but discretionary spending again declined in actual dollars and as a percent of sales.

Relative to the staff development mentioned above, the new acquisitions editor is already adding material strength and productivity to our operation with several major signings of important book contracts while the promotion of our publicist has made a visible difference in the visibility–and sales efforts–of the press.

One special acquisitions achievement needs special mention. After more than a year of discussion and consideration, the Press has formed a partnership–a collaboration–with the Fay Jones School of Architecture. Among the several features of this collaboration will be two separate book series, bearing a joint imprint of the Press and the Fay Jones School. The first book will be going to press this summer and there are several more in the works. We hope to

work out similar arrangements across the campus, demonstrating the value and the benefits of interdepartmental collaboration.

The new business generated by our client presses grew substantially this past fiscal year–especially due to a best seller from the Butler Center. *It must be recognized, however, that our revenue success in this endeavor is only as good as the publishing/sales success of our client presses. Accordingly, we reassess our contractual arrangements on a regular basis and will be revisiting the contracts with our clients on an annual basis.* In general, however, we continue to look for new client presses and have confidence in that method of financial reinforcement.

In another form of revenue enhancement during FY2009, we took on a huge production job for the Arkansas Secretary of State's office, producing for them their decennial report–an $85,000 job for which we were paid a fee. We have more projects like this in mind.

With all of these client presses–whether for distribution: *e.g.* Butler Center or Ozark Society or for production services, *e.g.* Secretary of State–we are maximizing an economy of scale, adding excellent and new revenue flow with no additional staff and a minimum use of overhead.

Some miscellaneous highlights of FY2009:

Awards

- *A Necklace of Bees*, Dannye Romine Powell, won the Brockman-Campbell, best book of poetry, North Carolina

- *The Oxford American Book of Great Music Writing*, Mmarc Smirnoff, won ForeWord Magazine's Gold (1st place) prize in music category

- *Now You're the Enemy*, James Allen Hall, won the Texas Institute of Letters Award; Finalist for the Independent Booksellers ForeWord Magazine Book of the Year Award; co-winner in the gay poetry award from Lambda Book Awards

- *Fire Landscape*, Gary Fincke, won the 2009 Paterson Prize for Literary Excellence

- *Ruled by Race*, Grif Stockley, won the AHA Ragsdale Award

- *War on Error*, Melody Moezzi, won honorable mention for The Gustavus Myers Center book awards

- *Outlaw Style*, R. T. Smith, won the Virginia Poetry Book of the Year Award

Of special note: Melody Moezzi's Book, *War on Error*, was ranked #1 in sales in three separate categories on Amazon.com. Author Moezzi was interviewed twice on CC TV, Montel Williams, NPR, she had articles in the *Washington Post* and *Huffington Post*. Further her book was selected for the "First Year Read" program at the University of Dayton and assigned to all incoming first-year students at the university. They ordered 1,000 books from us!

Every year, a select committee of librarians from the American Association of School Librarians and the Public Library Association publishes a directory of university press books as a "collection development tool". Fiscal year 2009 was a banner year for recognition UA Press books with nine books being listed with special citations. Eight of the nine were cited as "books with a wide appeal and/or an expectation of lasting importance." Two of the nine books selected were tabbed with the association's top accolade, "Outstanding," and were given special position in the directory with a personal review written by a committee member for this category.

The University Press mounted exhibits at the following venues–national and local:

- Middle East Studies Association, Washington, DC
- Southern Historical Association, New Orleans
- Organization of American History, Seattle
- Arkansas Library Association, Little Rock
- Arkansas Literary Festival, Little Rock
- Associated Writers Programs, Chicago
- Arkansas historical Association, Magnolia
- Books In Bloom, Eureka Springs
- Civil War Roundtable, Springfield, Missouri

A number of Press books were supported by outside gifts. We are thankful to the following for their support:

- Center for Food Safety at the University of Arkansas
- Bob and Mary Bogle Trust
- Arkansas Department of Parks and Tourism
- Arkansas Archeological Survey
- Old Statehouse Museum
- Mosaic Templars Cultural Center

FY2009 was a very interesting year. For an academic press, fully in the university and fully in the general economy, it was a real adventure. Our core business–book revenues–took some real hits–due to the general/global economic crisis and the rapidly changing nature of the publishing/information industry. Still, by the addition and growth of collateral revenue sources (especially sales and distribution and book production for outside "clients"), we were able to exceed last year's revenues. The Press also displayed very solid control of discretionary spending. We were able, with the assistance of our interest account and other UA Press cost centers, to "balance the books" at year's end. While there are very positive signs for growth and financial strength several years out, the near future–FY2010 and FY2011–need attention. The Press has not had a budget increase in 10 years and that needs to be addressed.

We've been phoenix over the past decade; we hope to be eagle in the next.

Arkansas Center for High Performance Computing

The Arkansas Center for High Performance Computing was a major research enabling project during Fiscal Year 2009 of the Vice Provost for Research in collaboration with University Information Technology Services. This effort is directed Dr. Amy Apon, Professor of Computer Science and Computer Engineering in the College of Engineering. A revision of Dr. Apon's report to the National Science Foundation for the current Major Research Instrumentation grant in high performance computing is included here as documentation of this project.

The Star of Arkansas supercomputer has completed its one year anniversary of deployment. Star was deployed in "friendly user mode" on April 7, 2008, and went into full production on May 21, 2008. This document describes the usage of the Star of Arkansas, research products, and significant project-related accomplishments during the reporting period.

Supercomputer Usage

For the period from May 2008 through the end of March 2008, Star has run over 29,200 jobs and has executed about 7.5 million hours of compute time. Approximately 84% of the available compute hours on Star have been utilized since beginning production, including scheduled maintenance periods.

Figure 1 shows the number of jobs waiting in the queue for each week from May 2008, until the end of March 2009. Figure 1 shows that the queue has rarely been empty. Star has had no unscheduled downtime. Scheduled downtime for maintenance occurred for about four days in July 2008, and for about five days in January 2009.

Figure 1: Number of Jobs in the Queue for Each Week

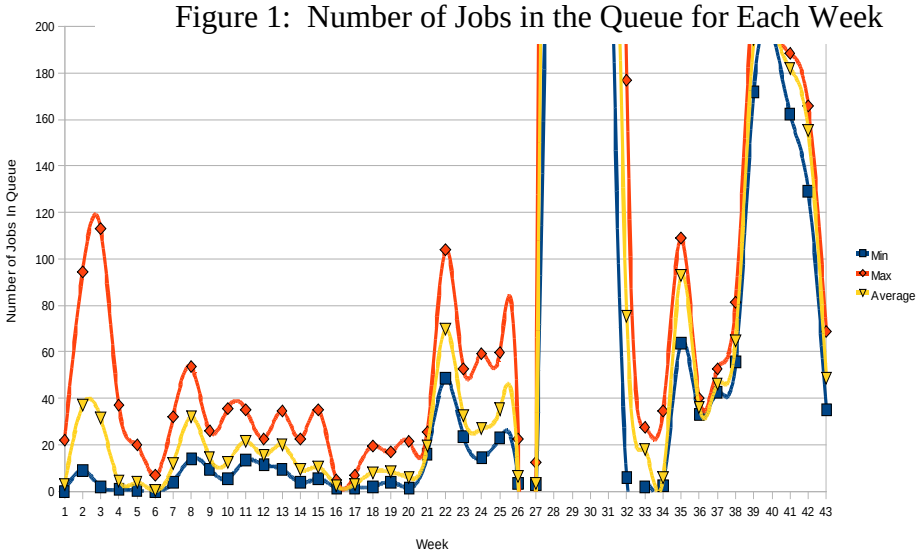
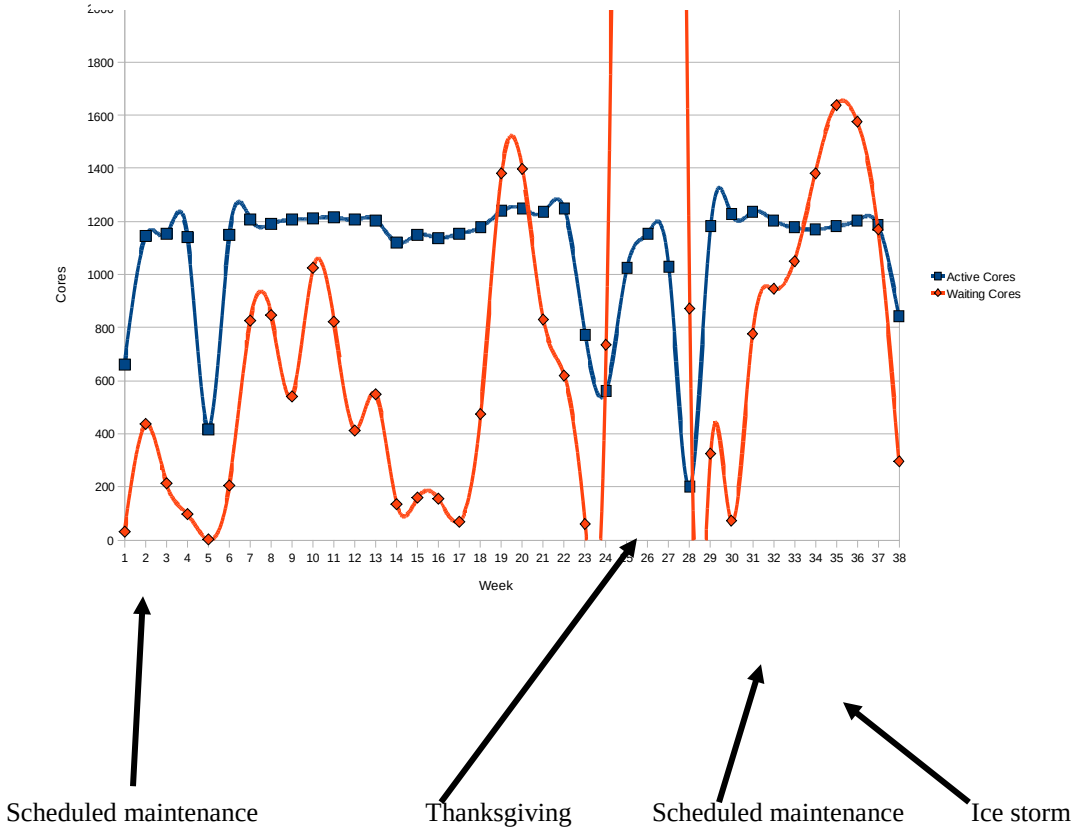


Figure 2 illustrates the number of waiting cores (or processes) along with the number of busy cores for the same time period from May 2008, until March 2009. Figure 2 shows that the number of busy cores is almost always close to the total number of cores available (1256). Usage dropped during scheduled downtime in July (week 5) and in January (week 28) and in the

week of Thanksgiving. The apparent drop in week 38 is an anomaly of the data collection and not an actual drop of usage.

As a result of high quality data center support, Star continued to be utilized even during the severe ice storm during which the University closed for five days. The number of submitted jobs (and waiting cores) declined during the storm when most of the community was without power. The very high number of waiting cores in December represents a very large number of submissions by a single user that were queued.

Figure 2: Number of Waiting and Active Cores for Each Week



Since May 2008, 46 distinct users have run jobs on Star. The users are members of the groups of at least ten different investigators. Students in two courses have been supported, including seven students in a Computational Physics course offered in summer, 2009 (instructor Ponomorava), and seven students in "Introduction to High Performance Computing" offered in spring, 2009 (instructor Apon). Users includes 30 graduate students and at least three undergraduate students.

Research Products

The following publications have resulted from computational research supported by MRI Grant #0722625 during this reporting period.

1. Prosandeev, S., and L. Bellaiche. "Electric Field Induced by Dynamical Change of Dipolar Configurations in Ferromagnets," Physical Review Letters, 102, 097205. 2009.

2. S. Prosandeev, I. Ponomareva, I. Naumov, I. Kornev, and L. Bellaiche. “Original properties of dipole vortices in zero-dimensional ferroelectrics,” Journal of Physics: Condens. Matter. 2008.

3. Prosandeev, S., and L. Bellaiche. “Hypertoroidal moment in complex dipolar structures,” Journal of Material Science, accepted, 2009.

4. Prosandeev, S., I. Ponomareva, and L. Bellaiche. “Electrocaloric effect in bulk and low-dimensional ferroelectrics from first principles,” Physical Review B, 78, 052103. 2008.

5. Prosandeev, S. and L. Bellaiche. “Controlling double vortex states in low-dimensional dipolar systems,” Physical Review Letters, 101, 097203. 2008.

6. S. Prosandeev and L. Bellaiche. “*Order parameter in complex dipolar structures: Microscopic modeling.”* Phys. Rev. B. 2008.

7. Prosandeev, S., I. Ponomareva, I. Kornev, et. al, “Control of vortices by homogeneous fields in asymmetric ferroelectric and ferromagmetic rings,” Physical Review Letters, 100, 047201. 2008.

8. S. Lisenkov, I. Kornev, and L. Bellaiche. *“Properties of multiferroic BiFe03 under high magnetic fields from first principles.”* Physical Review B 79, 012101. 2009.

9. E. Almahmoud, I. Kornvev, and L. Bellaiche. “*Critical Behaviors in Ferroelectrics from First Principles.”* Physical Review Letters 102, 105701. 2009.

10. S. Lisenkov, I. Ponomareva, and L. Bellaiche. “*Unusual static and dynamical characteristics of domain evaolution in ferroelectric superlattices.”* Physical Review B79, 024101. 2009.

11. E. Huff, P. Pulay. “A Potential Surface for the Interaction between Water, and Coronene as a Model for Hydrophobic Surface,” Mol. Phys., in press (volume honoring H.F. Schaefer).

12. E. Huff. “Interaction of Polar and Charged Molecules with pi-electron Systems,” Dissertation at University of Arkansas. May 2009.

13. T. Janowski, P. Pulay, *“Efficient Calculation of the Energy of a Molecule in an Arbitrary Electric Field,”* International Journal of Quantum Chemistry, in press, 2009.

14. J. L., Martin, *“Experimental and Theoretical Explorations of Titanium Dioxide Based Materials,”* Dissertation at University of Arkansas, May 2009.

15. B. Lu, L. Ngo, H. Bui, A. Apon, N. Hamm, L. Dowdy, D. Hoffman, and D. Brewer. "*Workload Modeling for Performance Management."* Computer Measurement Group. 2008.

16. B. Lu. "*An Integrated Capacity Planning Environment for Enterprise Grids ."* Ph.D. Dissertation at the University of Arkansas. May 2008.

17. H. Bui. "*Study of Delay Factors in Fairshare Scheduling."* Masters Thesis at the University of Arkansas. December 2008.

18. Spearot, D.E., Tschopp, M.A., McDowell, D.L. "Orientation and Rate Dependence of Dislocation Nucleation Stress Computed using Molecular Dynamics," Scripta Materialia, 60, 675-678, 2009.

19. Spearot, D.E., McDowell, D.L. "Atomistic Modeling of Grain Boundaries during Plasticity of Metallic Polycrystalline Materials," Journal of Engineering Materials and Technology, accepted, in press. 2009

20. S. Koh, "Fatigue modeling of nanostructure chip to packages interconnection", Material Science and Engineering, Georgia Institute of Technology, 2008 (A. Saxena, Co-advisor)

21. A. Apon, S. Ahalt, and T. Talley, "A Cyberinfrastructure Strategic Plan for the State of Arkansas," Linux Cluster Institute Conference on High Performance Computing Clusters, March, 2009.

22. Griffin, T.W., R.J.G.M. Florax, and J. Lowenberg-DeBoer. "Evaluating Spatial Effects Induced by Alternative On-farm Trial Experimental Designs with Cross-regressive Variables Using Monte Carlo Methods," In Proceedings of the 9th International Conference on Precision Agriculture, Denver, CO July 21-23, 2008.

Conference Presentations

1. Rajgarhia, R.K., Spearot D.E., Saxena, A. (2008) "Microstructural stability and plastic deformation behavior of nanocrystalline copper-antimony alloys," presented at: Materials Research Society Fall 2008 Meeting, December 1-5, 2008, Boston, MA.

2. Rajgarhia, R., *Spearot, D.E., Saxena, A. (2009) Molecular Dynamics Simulations of Dislocation Activity in Single Crystal and Nanocrystalline Copper Doped with Antimony, presented at: TMS2009, 138th Annual Meeting and Exhibition, February 15-18, 2009, San Francisco, CA.

3. Spearot, D.E., Rajgarhia, R., Saxena, A. (2009) Plastic Deformation of Single Crystal and Nanocrystalline Copper: Influence of Antimony Dopants on Dislocation Nucleation, presented at: Plasticity2009, January 3-8, 2009, St. Thomas, US Virgin Islands.

4. Rajgarhia, R.K., Saxena, A., Spearot, D.E. (2008) Creep Deformation Behavior of Nanocrystalline Copper Doped with Antimony, presented at: MRS Fall Meeting, December 1-5, Boston, MA.

5. Rajgarhia, R.K., Spearot, D.E., Saxena, A. (2008) Effect of Antimony Dopants on the Plastic Deformation Behavior of Single Crystal and Nanocrystalline Copper, presented at: MS&T2008, October 5-9, 2008, Pittsburgh, PA.

6. Griffin, T.W. 2009. Applied spatial statistical analysis for agricultural field experimentation. As part of the Applications of GIS and Remote Sensing in Entomology Symposium at the Southeast Branch of the Entomological Society, Jacksonville, FL.

7. A. Apon, "A Cyberinfrastructure Strategic Plan for the State of Arkansas," Linux Cluster Institute Conference on High Performance Computing Clusters, March, 2009.

Awards and Recognition

- Laurent Bellaiche has been selected to receive the Alumni Association's 2009 Faculty Distinguished Achievement Award in Research.

- Amy Apon has been selected to receive the 2009 Imhoff Award for Excellence in Research from the College of Engineering.

- Amy Apon was elected to the position of Vice Chair for the Coalition for Academic Scientific Computation

Significant Activities

- Completion of the Arkansas Cyberinfrastructure Strategic Plan, October, 2008
- Submission of the EPSCoR Track 2 proposal with collaborators in West Virginia, PI Apon, building on our successful HPC enterprise.
- Hiring of Dr. David Chaffin, Associate Director of HPC Operations and User Support, March, 2008
- Passage of HB 2011, the Arkansas Cyberinfrastructure Task Force Act
- Passage of other bills for the allocation of GIF funds in support of cyberinfrastructure
- Visits and presentations to ASU, UAMS, UCA
- Beginning collaboration with UAMS
- UCA has started the production deployment of Condor
- UAMS is engaged in the production deployment of caBIG and the authentication infrastructure promoted by the National Institutes of Health

- Amy Apon contributed to the CASC/Educause Report on Developing a Coherent Cyberinfrastructure from the Campus to the National Level
- The University of Arkansas has been selected to host a week of SC Education training, "Computational Thinking," to be held August 2-8, 2009.

Significant invited talks, presentations, and engagement meetings by Principal Investigator Dr. Amy Apon

The following events included presentations or significant collaboration meetings

8/28/2008	Wal-Mart, Bentonville, AR
9/15/2008	J.B. Hunt, Fayetteville, AR
9/25/2008	Information Technology Research Institute Advisory Committee, Fayette, AR
9/30/2008	Louisiana Immersive Technology Environment, Lafayette, LA
10/6/2008	Oklahoma Supercomputing Symposium, Norman, OK
10/7/2008	AF CyberConference, Shreveport, LA
10/22/2008	Arkansas State University, Jonesboro, AR
11/17/2008	Supercomputing, several talks, Reno, NV
12/9/2008	ARE-ON Steering Committee, Little Rock, AR
12/12/2008	Great Plains Network Consortium Cyberinfrastructure Summit, Kansas City, MO
1/29/2009	Student Tour of Star of Arkansas, Fayetteville, AR
2/2/2009	Presentation to the Arkansas EPSCoR committee, Little Rock, AR
2/12/2009	University of Central Arkansas, Conway, AR
2/13/2009	Acxiom Laboratory for Applied Research Conference, Conway, AR
2/25/2009	Participation via Webinar, NITRD Forum
3/11/2009	National Center for Atmospheric Research, Boulder, CO
3/12/2009	Linux Cluster Institute, Boulder, CO
3/16/2009	University of Arkansas for Medical Sciences, Little Rock, AR
3/23/2009	Visit with Arkansas DIS, Little Rock, AR
3/26/2009	NSF Workshop on Software Sustainability, Indianapolis, IN
3/30/2009	NSF Panel, Arlington, VA
4/2/2009	Presentation to committee of Vietnam visitors, Fayetteville, AR
4/7/2009	Signing of the Arkansas Cyberinfrastructure Task Force Act, Little Rock, AR
4/16/2009	Matlab campus license seminar, Fayetteville, AR
4/28/2009	Coalition for Academic Scientific Computation, Arlington, VA
4/30/2009	SURAGrid Hands-on Meeting, Washington, DC
5/1/2009	Visit NSF, Arlington, VA
5/6/2009	NSF Panel, Arlington, VA
5/21/2009	NSF Panel, Arlington, VA
5/27/2009	Great Plains Network Consortium Annual Meeting, Kansas City, MO

Testing Services

Executive Summary

Our mission is to assist students in fulfilling educational goals and achieving advancement in their educational fields or careers by providing a variety of testing services by certified personnel in a pleasant, technologically advanced environment. Because we are mindful of the many challenges students face on a daily basis, we offer a very accommodating schedule for administering exams. Testing Services equips students with valuable information needed to promote educational growth and achieve goals during and after college. Student satisfaction and achievement are promoted through learning and engagement. The office conforms to nationally recognized professional testing standards including state-mandated regulations.

Testing Services administers many graduate and professional school admission tests, professional certification and licensure tests, exemption tests and exams offered by other state and national testing programs. The office also administers national exams such as GRE, LSAT and PCAT as well as institutional admission tests such as ACT, TOEFL and MAT. An example of exemption tests is the Advanced Composition Exemption Exam. Placement assessments like the Math and Reading Placement Tests, COMPASS and ELPT are also administered in addition to credit-granting tests such as CLEP and NOCTI. Another population served by this office is students in distance learning programs. A complete list of tests offered by this office on a regular basis is included in Appendix A.

During 2008-09 Academic Year approximately 11,000 students and prospective students who were satisfying admission/degree requirements at UA and other institutions were tested. Considering the current economy and the University's goal of significantly increasing the student body by the year 2010, it is expected that the demand for testing will grow.

To better manage limited space and personnel resources while increasing services to current students, alumni, and northwest Arkansas residents, Testing Services offers many test sessions during Saturdays, Sundays and evenings. During the past year, a total of 422 tests were administered: 158 sessions administered Saturdays, 19 administered late afternoon or evening hours, 11 sessions administered Sundays and the rest were scheduled during the week.

Often, UA students, staff or northwest Arkansas residents must satisfy testing requirements of other institutions to fulfill educational, certification, or licensure programs. Testing Services provides individual and correspondence test proctoring services to support the needs of these individuals. Also, standard test administrations are scheduled through special request for those taking tests not normally administered by this office. During the past year, Testing Services accommodated 114 individuals for such tests.

Testing Services is committed to serving test takers with disabilities by providing services and reasonable accommodations that are appropriate given the purpose of the test. Nonstandard testing accommodations are available for test takers who meet testing companies' requirements. Testing Services accommodated students' special testing needs by providing non-standard administrations to test takers with disabilities (e.g., visual, physical, hearing, learning, etc.). In

the 2008-2009 Academic Year, 41 examinees with documented disabilities requested and received non-standard testing accommodations.

Classrooms in Kimpel Hall and computer labs in the Walton College of Business with over 75 seats/computers are normally used to support the large numbers of students who are required to test during peak times. Testing Services is told by the Walton College that this was the last year nursing students could be accommodated in the large computer lab at Walton. With the exception in the month of June where Testing Services administers the most tests, demand for testing is highest between November and February (See Appendix B). The competition for space to administer tests continues to be a major challenge. Test sessions are scheduled using Testing Services' Computer-based Test Centers (CBT and GMAT) containing only 32 computers and paper-based testing seating 45 examinees. To support large state and national test administrations such as Praxis, tests are administered on Saturdays and Sundays in other buildings across campus. This year a total of 11 tests were administered on Sundays.

New Initiatives

During the past year, some changes took place in administration formats of the existing computer-based testing programs. Testing Services adapted many changes that took place this year and added new exams to accommodate more test-takers in the larger community. Included in this category is the Electrical Licensing Exam and International English Language Testing System or IELTS.

Over the past years, Testing Services has generated ideas to increase funding for the office by making proctoring services available as an option for those who are taking online classes or are participating in distance learning programs across the country. Students who attend an out-of-state college or university, a college that does not provide testing services, or participate in an external degree or distance learning programs can test here at the University. Also, proctoring services are provided for individuals who are not able to test on a regularly scheduled test date, or for those who are required to take a test which is not offered at the University of Arkansas. An individual administration is any test administration that's purposely given to an individual in a standard manner. Proctoring services are provided per student request at a time mutually convenient for both the student and testing staff.

With the hard work of the office staff posting the availability of proctoring services on Testing Services' website, additional revenue was generated. During this fiscal year a total of 114 such tests were administered and approximately an additional $6000 was generated for the office.

Also, this year Testing Services joined The Consortium of College Testing Centers (CCTC) which is a free referral service provided by the National College Testing Association (NCTA) to facilitate distance learning. The purpose of the CCTC is to make test administration services available to students at educational institutions away from their campuses. These services are provided in traditional paper-pencil formats as well as by on-line, web-based servers at some sites. Testing Services will receive additional test takers through this free service which will result in additional income for the office.

Testing Services is always looking for new ways to connect with UA students to provide up to date information in a way that is convenient for them and the rest of the campus community. With the increased popularity of online "social" media it's important to have a strong web presence. Because of this Testing Services redesigned its website this year to make it more user friendly, but more recently have begun posting Testing information on Twitter. The office has registered @testingservices on twitter.com and will use this account to update mainly UA Students as well as departments of test dates and deadlines along with links to the Testing Services website. Expanding our service online will be beneficial to the office and the campus as a whole in the months and years to come.

The QPay system is the University of Arkansas' official on-line payment application for credit and debt transactions. Testing Services is considering using this new system. To setup a QPay account, departments are to contact Credit Card Operations for merchant setup information. Each department using this system will be charged e-commerce transaction fees imposed by the bank monthly. The QPay system automatically assesses fees to departmental cost centers monthly.

To add a user to the QPay Administration interface, the QPay Security Request form will be completed by Testing Services and filed with Credit Card Operations for any charge of QPay security or to remove a user's access to the QPay Admin interface.

Specific Accomplishments of 2008-09

Testing Services had the following collaborations with UA departments:

- Collaboration with the College of Engineering Dean to schedule the SLPT to those students who are interested in obtaining a teaching assistantship a few days before the fall semester begins.
- Collaboration with deans, academic advisors and major professors to inform students of their eligibility and register to take the Advanced Composition Exemption Exam during 2008-2009 Academic Year.
- Collaboration with the Graduate Studies Department of Walton College of Business in regard to additional GMAT dates to accommodate all of their students.
- Collaboration with the Center for Educational Access by reinforcing testing companies' deadlines and providing time for review and follow-up correspondence with regard to students with special needs.
- Collaboration with the Registrar's Office to identify eligible Advanced Composition Exemption Exam (ACEE) students.
- Cooperation and collaboration with different departments on campus to receive appropriate SLPT topics for students who are interested in obtaining a teaching assistantship.
- Collaboration with the Honor's College by administering the CLEP exam with the first few orientations specifically to accommodate honor students.
- Collaboration with the New Student Office by scheduling and administering the Reading and Math Placement Tests with each orientation session.
- Collaboration with the New Students Office by providing them with CLEP brochures and an information sheet to be included in student orientation packets.

- Organizing and scheduling all institutional tests to accommodate the needs of different departments on campus.
- Collaboration with the Office of Admissions to streamline joint processes regarding admission tests and referrals to Testing Services.

Collaborating with Other Partners in Education

- Collaboration with area high school counselors to share information regarding the CLEP testing program with their students.
- Collaboration with area high school counselors by accommodating their students with disabilities with ACT information and non-standard testing.
- Complying with the continuing changes pertaining to the CBT tests such as TOEFL, Praxis, GRE and GMAT.

Expanding Test Program Offerings

- Successful negotiations and signing of contracts with testing companies with terms and agreements that allow Testing Services to serve students first and foremost and providing the office with the financial benefits of these test additions. Following are the new added tests:
    - IELTS (International English Language Testing System), contract acquired and signed May 5, 2009, will start testing soon after the representative's visit to Fayetteville on June 2nd.
    - Electrical Licensing Exam, testing will begin in June 2009.
    - Dantes Subject Standardized Tests (DSST).
- Expansion of services by increasing the number of test sessions and tests.

Streamlining Procedures

- Considering adding QPay System and processing all test fees through this system which is the University of Arkansas' official on-line payment application for credit and debit transactions.
- Processing and monitoring all test registrations and issuing admission tickets.
- Working with the ISIS team, Admission and Registrar's Offices to determine Testing Services' needs for ISIS reports and inquiries.
- Maintaining and updating Testing Services website so information is available to students 24 hours a day/7 days a week. The site provides students with test dates and deadlines, registration procedures, test preparation, registration forms, other relevant test information, and links to testing companies and their websites.

Managing Resources Efficiently

- Generating additional revenue for the office through offering new exams and proctoring services to all who require testing. Testing Services ended the year with approximately $70,000 after paying $20,000 for new CBT/GMAT Centers' air conditioning system.

- Obtaining old laptop computers from College of Business to supplement what the CBT Center already has only to postpone purchasing new computers.
- Worked with different testing companies to get new test contracts signed with terms and agreements that are financially beneficial to Testing Services. These tests include Electrical Licensing Exam, IELTS and DSST.

Ongoing Programs

Test Administration – Testing Services during FY administered 454 sessions of standardized tests 2008-09 to approximately 11,000 students. The number of students tested this year is less than the previous years.

National test dates are set by the testing companies and usually fall on Saturdays. Institutional test dates, including CBT dates, scheduled by Testing Services on weekdays, evenings and weekends are liable in accommodating students' schedules and the University's admission requirements and orientations schedule.

International English Language Testing System (IELTS) – IELTS is designed to assess the language ability of candidates who need to study or work where English is used as the language of communication. Cambridge ESOL, British Council, and IDP Education Australia: IELTS Australia jointly manage this test. IELTS conforms to the highest international standards of language assessment and covers the four language skills – listening, reading, writing and speaking.

Demand for IELTS (International English Language Testing System) continues to grow very rapidly with increased recognition and use of IELTS by U.S. educational institutions, professional bodies, and government agencies. IELTS International – the organization that is responsible for IELTS Test Center management in the US – was working towards a rapid and substantial expansion of the test center network in the US.

IELTS International called for applications for new test centers in the US to open in 2005. Test centers were expected to test a minimum of 200 candidates per year. To start the process and receive an application packet, University of Arkansas Testing Services submitted a brief "Expression of Interest" letter on September 30, 2005. The following information was included in this letter:

1. History of the organization applying to be a test center
2. Date of establishment
3. Operational status
4. Relationship with educational and professional organizations
5. Financial status

Upon review of the letter, IELTS International proceeded by sending the application packet including selection criteria, examiner requirements, etc. to Testing Services. Details on the attractive remuneration for test administration were also included. The UA Testing Services was approved immediately and became one of the newest IELTS Test Centers.

As the completion and signing of the Service Agreement can sometimes be a protracted process, IELTS sent Testing Services a review copy which was forwarded to UA's legal counsel's office responsible for contracts since they were required to approve the document. IELTS lawyers and the Associate General Counsel, Scott Varady, could not agree on the terms of the contract and this stage took very long as the UA's lawyers were concerned about the University participating in actively marketing the test, as the fees received could be subject to unrelated business income taxes. Thus, they wanted the Service Agreement changed. After many months of back and forth, the contract was approved in May of this year, 2009.

The next stage in the process started with an official site visit to view the center and the premises where the IELTS test would be delivered, and a final decision is then made. This visit was made by Richard Halstead of IELTS International on Tuesday, June 2, 2009.

Testing Services will receive the IELTS Service Agreement, signed by both the center and IELTS International soon. The center is then issued with an IELTS Test Center number and full test material is shipped from Cambridge ESOL. Training of the designated Test Center Administrator and Examiners is scheduled in August with the expected first test date of Saturday, September 26.

In cooperation with the Spring International Language Center Testing Services is in the process of inviting applications from trainee examiners to be trained to rate the Speaking and Writing papers of the IELTS test. The training session will be held over two consecutive weekends scheduled for August after applications are received.

Law School Admission Test (LSAT) – In anticipation of the new testing year, the Law School Admission Council (LSAC) gave a heads up that there are significant changes to LSAT test center regulations, effective with the June 8, 2009, administration. Here are some of the changes:

- **New identification requirements.** Each test taker must present one current, valid (not expired) government-issued ID containing a recent and recognizable photograph and signature. Acceptable forms of ID include passport book and driver's license. Government–issued employment IDs and passport cards are not permitted. The first and last name on the ID must match exactly the name on the LSAT Admission Ticket. No one will be admitted into the test room without acceptable identification.

- **New grounds for dismissal from the test center–prohibited electronic devices.** Test supervisors are authorized to dismiss test takers from the test if they are discovered using or having in their possession an electronic device. LSAC has published the policy listing prohibited electronic devices and actions in the *LSAC Law School Admission Information Book* and the Candidate Information Sheet, which is included as well in the LSAT Admission Tickets and the Supervisor's Manual.

- **LSAC has instituted a test center staff training program.** Some test centers may be contacted and offered the opportunity to participate in training sessions. Sessions are intended to

be informative and instructional, and to provide a forum for the exchange of ideas for offering the LSAT under the best possible conditions.

Many of the LSAT supervisors have expressed concerns about the June test administration being offered on Monday. They have reported to LSAC that scheduling conflicts and the availability of rooms and staff impact their ability to offer the June test. LSAC is considering moving the June administration from Monday to Sunday. At this point the change is simply under consideration. LSAC will be sending a survey to all test supervisors asking for their input so that they may assess the feasibility of the change. If the decision is in favor of moving the test from Monday to Sunday, this would not occur until the June 2011 administration.

GRE General Test – Beginning in January 2008, the GRE Program began including reformatted reading passages in the Verbal Reasoning section of the computer-based GRE General Test. Currently, reading passages accompanying Reading Comprehension questions contain line numbers that reference specific parts of the passages. Those line numbers will be replaced with highlighting when necessary in order to focus the test taker on specific information in the passage.

The reformatted question types are part of the continuing improvements to the General Test. During this time, test takers may encounter both formats in their tests.

On May 1, 2009, the test fee for the GRE General Test increased by $10 in all locations and went to $150

In an effort to expand graduate school opportunities in the current economy, the Graduate Record Examinations (GRE) program will be offering a limited number of GRE fee reductions to individuals who are unemployed. The program will allow currently unemployed workers to register for the GRE General Test for $75. The regular registration cost is $150.

The GRE Fee Reduction Program for the Unemployed is intended to complement existing GRE test fee reduction programs in light of current economic conditions. The program specifically targets individuals who are currently out of work and receiving unemployment benefits.

The GRE is often the first step in the pursuit of an advanced degree. Because a graduate education can be the key to greater career and financial opportunities, the time was right to expand the program to those who are unemployed.

Eligibility Requirements

- Must be a U.S. citizen or resident alien, age eighteen (18) or older, who is currently unemployed and has become unemployed within the past 6 months.
- Must be planning to take the computer-based GRE General Test in the United States.
- Must be able to submit a copy of an Unemployment Benefits Statement from the past 90 days as proof of unemployment.

The GRE Score Report Request Form is changing as follows. The new form no longer contains the option to include scores from the stand-alone Writing Test because those scores are not reportable after July 1, 2009.

Electrical Licensing Exam – The Arkansas Board of Electrical Examiners (BOEE) is responsible for the administration of Arkansas laws governing the licensing of electricians. The BOEE has contracted with Prometric Inc. to conduct its examination program. The Master Electrician Exams are a group of state-specific examinations that are used to determine whether or not an individual possesses the skills and knowledge necessary to work as a certified or licensed master electrician within a particular state. These exams are designed to assess the individual's knowledge and understanding of the National Electrical Code, the laws and regulations of the state in which the individual is pursuing a career, basic and advanced electrical theory, electrical layout, and electrical design.

The exact format of each exam and the exact requirements that are necessary to receive licensure or certification within each state varies from state to state. However, in most states, an individual interested in becoming a licensed or certified master electrician must have experience working as a journeyman electrician and must pass the master electrician exam administered by the state.

Test of English As a Foreign Language (TOEFL) – TOEFL iBT is an English-proficiency test designed to assess English-language skills in academic settings. ETS has made several changes to the test with the goal of making the TOEFL a more accurate gauge of the English skills needed for academic success. The test material will have a more academic context and is designed to more closely mimic the academic environment.

The structure of the new TOEFL will test two "inputs", reading and listening, and two "outputs", writing and speaking. The TOEFL test fee increases will take effect July 1st. In establishing these fees, ETS has tried to strike a balance between their costs, which vary by region, and specific market sensitivities. TOEFL iBT test fee vouchers purchased from ETS by institutions and organizations at the previous test fee will be honored. No additional payment will be necessary when test takers register using a voucher previously purchased.

The following changes will take effect July 1st:

- **Test fee increase:** The new test fee is $170 in the United States. In the rest of the world, the minimum fee is $150, and prices range from there, depending on testing location. Some countries will experience no fee increase.
- **Late registration fee:** $35 (was $25)
- **Reschedule fee:** $60 (was $50)

Dantes Subject Standardized Tests (DSST) – The DSST program is an extensive series of 37 examinations in college subject areas that are comparable to the final or end-of-course examinations in undergraduate courses. The DSST credit by exam program gives students the opportunity to receive college credit for life experience as a form of prior learning assessment. These exams are recommended for three semester hours of credit by the American Council on Education and the 37 exams are offered in diverse subject areas such as health, ethics, physical

science, business, humanities, mathematics, finance and technology. From personal accounting to public speaking, from health to law enforcement or ethics, there's a DSST subject exam students can take.

The DSST program is owned by Prometric, the global leader in testing and assessment, and has been placing students on the fast track to college degrees since 1986. Beginning in 2006, Prometric introduced an Internet-based version of the DSST tests at national test centers in colleges and universities. All DSST test titles are available except for the "Principles of Public Speaking" test that will remain a paper-based examination.

Consistent with the testing company's efforts to keep the DSST program timely, relevant and useful, Prometric will be revising and updating another four of its DSST exams -- this time in the Business Discipline. They have announced that the revised Business Mathematics, Introduction to Business, Principles of Finance and Principles of Supervision exams will launch in July.

There are a handful of important dates to be aware of in offering these refreshed exams to students.

The four refreshed titles are scheduled to go live on Wednesday, July 15th. This means the newly refreshed exams will be available at all test centers on or slightly after this date.

Students may continue to test and be scored on the old exams through Monday, August 31st. As of Tuesday, September 1st, we will no longer be scoring the old exams in paper and pencil. They will also remove them from the internet based testing engine.
New fact sheets, including content outlines for the refreshed exams will be available on the testing company's website, www.getcollegecredit.com, on Monday, June 1st. Because of the changes to scoring methodology of the refreshed exams, it may be necessary for the University to re-evaluate these exams for credit.

What does this mean to students? The refreshed exams will be scored using the same new scoring methodology as the exams we updated last year. Therefore for a period of time (July 15th to September 1st) students will be receiving one of two types of scores depending on which version of the exam they take.

Castle Worldwide, Inc. – Most of these exams fall under the category of Professional Certification. The exams administered, the most, at the University of Arkansas are:

- American Board of Certification for Gastroenterology Nurses (ABCGN),
- Certified Gastroenterology Nurse (CGRN),
- American Council on Exercise Personal Trainer (ACE),
- Associate Kitchen & Bath Designer (AKBD) for the National Kitchen and Bath Association BOC Athletic Trainer Certification Exam (BOC),
- Certified Rehabilitation Registered Nurse (CRRN),
- Professional Traffic Operations Engineer (PTOE) Certification Exam.

Within the Castle Worldwide, Inc. Manual there is a table with each specific exam and instructions. There are at least 43 different exams. Not all will be administered here at the University, but it is a variety.

Non-Standard Test Administration – Non-standard testing accommodations are available for test takers who meet the Americans with Disabilities Act (ADA) eligibility criteria. Testing Services is committed to serving test-takers with disabilities by providing reasonable accommodations deemed appropriate. All requests for accommodations must be approved in accordance with the particular testing companies' policies and procedures, except for test takers who require only minor modifications to the standard testing environment due to documented medical needs. Minor modifications include special lighting, adjustable table or chair, and breaks for medication or snack. Documented medical needs may include diabetes, epilepsy, or chronic pain. These test takers must submit a letter of support from a medical doctor or other qualified professional stating the nature of the condition and the minor modifications requested. The letter with the appropriate registration form and fee are sent to the testing company for final approval.

In the 2007-2008 Academic Year, Testing Services tested 30 examinees with documented disabilities on an individual basis. Please see Appendix C for a complete list of different disabilities accommodated by Testing Services. Every effort was made to accommodate each and every student with a disability who needed to test at the University of Arkansas. This includes qualified individuals with disabilities who appear at the site with personal assistive devices or animals, such as service animals (dogs or other animals trained to assist), wheelchairs, walkers, canes, braces, speech or hearing aids, and other communication or mobility enhancing technology or animals.

Graduate Management Admission Test (GMAT) – By May 2009 those entering testing centers to take the GMAT will have their palms scanned. The biometric technology is meant to catch students who hire others to take tests for them. The devices were first used at 16 testing centers in India and Korea. Eventually the scanners were used at more than 400 centers in 107 countries. University of Arkansas Testing Services started scanning palms in February of this year.

The palm-scanning device captures an image of the blood coursing through test-takers' veins. Each person has a unique "palm-vein" image. A student whom a business school official suspects of acting fraudulently could be asked to have their palm scanned, and that image could be checked against the image the student provided for the GMAT.

Business schools expressed an interest in purchasing the palm-scanning technology, which is manufactured by Fujitsu. It costs less than $1,000.

In September, Pearson VUE (the technical support company for GMAT) will be releasing several new exams which will require the use of .NET 2.0 from Microsoft. Test Centers which currently have .NET 1.0 will need to upload .NET 2.0 by that time. Unlike many other types of software, Testing Services simply needs to add .NET 2.0 in addition to the current .NET 1.0 and will keep both versions rather than replacing one with the other. The PVTC Technical Requirements document was updated by the company to reflect this change.

The Microsoft .NET Framework is a software framework that works with Microsoft Windows operating systems. It includes a large library of coded solutions to prevent common programming problems and a virtual machine that manages the execution of programs written specifically for the framework.

To ensure test delivery workstations can properly deliver Pearson VUE exams, beginning in September, the Delivery Manager program will check the testing machines for several components, including .NET 2.0. To save some time, and save UA Testing Services candidates some frustration, VSS has requested that centers check their computers to see which version of .NET they have and, if necessary, update their testing machines with .NET 2.0 by August 31, 2009. If .NET 2.0 is not installed on the testing machine when Delivery Manager is launched, an error stating that a certain component is not installed will appear, and this will delay candidates in taking their exam.

Proctoring Services – The proctoring of examinations is a service offered by the University of Arkansas' Testing Services and is based on the availability of personnel, facilities, and technology to do so. This is for anyone needing to take tests in northwest Arkansas for another school or agency. Students participating in *distance learning* programs or *correspondence degree* programs, and professionals needing to be tested in order to receive *certification* in their field may be able to arrange to have their tests proctored at Testing Services facility.

Proctoring services are available to both UA students and non-students for a small fee. These tests are administered per student's request at a time mutually convenient for both the student and Testing Services' staff and test schedule. There were a total of 114 individual administrations during the 2008-2009 Academic Year.

Proctoring services include:

- Scheduling of the examination and collection of the proctoring fee directly from the student or school, as preferred by the school
- A quiet, well-lighted area within supervisory distance of the proctor
- Verification of any instructional materials allowed during the examination process
- Security of the sealed examination until it is opened in the student's presence at the beginning of the examination session
- Identification of the student by photo I.D. and verification of the student's signature on any certification accompanying the examination
- Return of all papers, including scratch sheets, examination questions, and the completed certification/forms directly to the school
- Termination of the examination, collection of exam materials, and immediate notification to the school of improper conduct on the part of the student or any evidence that there has been a violation of the examination process.

The Consortium of College Testing Centers (CCTC) is a free service offered by The National College Testing Association (NCTA) through which member institutions may list themselves as available to provide proctoring services for distance learning students from other institutions. The listing carries their testing schedule, contact information, and applicable fees. The list of

CCTC participants is available to the public free, from the NCTA Home Page. University of Arkansas is one of the many test centers currently listed on the NCTA as a center which offers proctoring services and this is how so many test-takers find out about proctoring services at the University of Arkansas.

College Level Examination Program (CLEP) – The College-Level Examination Program (CLEP) gives you the opportunity to receive college credit for what students already know by earning qualifying scores on any of 34 examinations. Students can earn credit for knowledge they've acquired through independent study, prior course work, on-the-job training, professional development, cultural pursuits, or internships.

How CLEP Helps Students

- **Saves time.** A satisfactory score on a CLEP exam can earn students from 3 to 12 college credits.
- **Saves money.** The cost of a CLEP exam is $70.00 ($72.00, effective July 1, 2009), a fraction of the tuition and fees for the corresponding course.
- **Makes college more interesting.** Students can skip general introductory courses and move on to more advanced classes, or explore new and challenging academic areas.
- **Graduate on time.** CLEP can help students to the finish line if they are a few credits shy of graduation
- **Satisfies a proficiency requirement**. Students can demonstrate their ability in college math or a foreign language.

Praxis – The service enhancements and changes planned for the 2008-09 testing year are noted below. The changes included:

- **Internet Registration Availability.** Online registration availability hours were extended until 1 a.m. Site hours are Monday – Friday, 7 a.m. – 1 a.m. (EST) Saturday, 7 a.m. – Sunday, 8 p.m. (EST)
- **Candidate Score Reports available on the web.** Following the September 2008 test date candidates who registered online were able to review their score report online. Candidate Score Reports were posted on the day that paper score reports were mailed. Candidates were able to review their scores for three weeks. Score reports can be downloaded and printed but these were not considered "Official Score Reports" which is still sent to students directly. There is no fee associated for this service.
- **Testing sessions was reduced from three to two.** Beginning with the September 2008 test date, the testing day was shortened. All tests were administered in either the first or second session. Tests currently administered in the third session were moved to the either the first or second session. Principles of Learning and Teaching (PLT) tests were moved to session two.

The School Leaders Licensure Assessment (SLLA) test is being revised and will be introduced in the new testing year. The test name will remain the same but will have a new test code of 1011. The revised SLLA will be a 4-hour test that will include both multiple choice questions as well as constructed response questions. Specific instructions for administering the revised test will be

included in the new Supervisor's Manual. Superintendent Assessment (SSA) test will change and conclude at 12:30.

Principles of Learning and Teaching (PLT) will be offered in both sessions. This test will be given in Group G in either session 1 or session 2. The new World Language Tests will be offered on alternate test dates, French (test code 0174), German (test code 0183) and Spanish (test code 0195).

Texas Educator Certification (TEC) – The State of Texas requires every person seeking educator certification in Texas to perform satisfactorily on comprehensive examinations. The purpose of these examinations is to ensure that each educator has the prerequisite content and professional knowledge necessary for an entry-level position in Texas public schools. These programs were developed for this purpose.

These are criterion-referenced examinations designed to measure a candidate's knowledge in relation to an established criterion rather than to the performance of other candidates. Developing the tests was a collaborative process involving classroom teachers and other educators from public and charter schools, university and educator preparation program faculty, representatives from professional educator organizations, content experts, and members of the community.

Diversity

Testing Services underwent multiple staff changes, and upgrades to address the office's increased responsibility and workload partly due to the implementation of the new student information system, ISIS in the last couple of years.

Efforts - In compliance with the university's and the testing companies' polices, test supervisors and proctors are recruited, selected and trained in order to operate the center on a nondiscriminatory basis. To meet this responsibility, the Director of Testing Services hires workforce as required and makes certain that they meet the qualifications given in the test administration manuals and that they reflect the same ethnic and gender ratios as the expected examinees.

The Testing Center promotes retention of international students by providing services in a congenial atmosphere that fosters relationships and a sense of community among the diverse population groups at UA. These include:

- Continuing to facilitate accommodation of students with disabilities and administer tests based on their needs and the testing companies' approval.
- Assisting in creating a diverse campus environment by establishing and maintaining ties with individuals internationally to assist with recruitment of international students to the University of Arkansas.
- Continuing partnership with and support International and Graduate Admission Office to increase the number of graduate and undergraduate students from an underrepresented group such as Iranian students.

- Facilitating information exchange and enhance support by connecting new Iranian faculty/staff/students and their families with others in northwest Arkansas.
- Continuing providing support to international students in the Spring International Language Center by providing general test preparation workshops.
- Continuing collaboration with all University offices regarding the diverse population and their needs, e.g., Center for Educational Access, Veterans Upward Bound, etc.
- Providing time for office staff to participate in multicultural events on campus or in the community regarding services provided to the diverse UA population.
- Maintaining collaboration with Ozark Literacy Council by referring international student spouses to their ESL program.
- Attending National College Testing Association (NCTA) Conference in order to increase knowledge of how to properly administer tests to a diverse population.
- Assist in developing ties that boost the likelihood that prospective graduate and undergraduate applicants from Iran will enroll.
- Continue educating community members through responding positively to requests for presentations from students, faculty and various off-campus groups, e.g., Multicultural Center of NWA, Altrusa International of Fayetteville, NWACC, churches, public schools, etc.

Challenges and Barriers

Air Conditioning Installation Testing Services strives to provide excellent customer service for all testing candidates by providing a nondistractive environment that is conducive to testing. However, the department was faced with a major barrier in the area of testing room temperatures and received numerous complaints from our test-takers about this problem. The testing companies began issuing free retake exams to all students who had to test in unacceptable conditions.

Hotz Hall has scheduled sessions of boiler heat along with scheduled seasonal air conditioning throughout. There were many times when the building heat was still on and 21 students were being tested in the Computer-Based Test Center. With the heat generated from the 21 computers in use combined with the number of warm bodies in the room, the environment was unacceptable for test-takers. Several different avenues to remedy the situation were tried; however, none met the standards for the optimal testing experience.

After many conference calls and meetings with the Facilities Management staff, it was determined that Testing Services needed an air conditioning supply independent from the Hotz Hall building supply. This entailed several meetings and ended with a very high investment requirement. The department was unable to pay the $40,000 needed to complete the job. Several options were considered and ultimately Facilities Management agreed to cover 50% of the cost since it was a major building renovation at the University.

The complete air conditioning system was installed in the CBT and GMAT Centers in March of 2009. Although it took a great deal of money and time to get this system in place, it made all the difference in the world to test-takers. Testing Services has complete control of the center's temperature and can adjust it manually to adjust to the inconsistent weather or unseasonably

record temperatures. As a result the complaints have ceased and Testing Services now receives 100% A+ reports from test-takers. This investment was worth every penny and has provided an environment which examinees so highly deserve while working towards their academic and career goals.

Website Management: Constant updates to the testing schedule/calendar and other necessary changes are time consuming and need someone with great attention to details. It requires someone who knows the ins-and-outs of developing and maintaining a website. Even those who are experts in other computer related fields sometimes discover managing and setting up a website to be challenging. Due to Jacob London's diligence, updates are performed to the Testing Services' site on a regular basis. He has helped identify the exact features Testing Services needs and not only redesigned the site to make it more compatible with the University's main website, but made it friendly to users. Jacob continues improving the site to assure students have the necessary information and updated content.

Prohibited Personal Items**:** In June 2009, Testing Services at the University of Arkansas established a policy for prohibited items that encompasses the policies of all testing programs administered at UA. The prohibited items included, but not limited to the following items: cell phones, pagers, PDA's or other electronic communication devices, backpacks, purses/tote bags, digital or beeping watches, portable audio or audio-visual devices, photographic or video devices, headphones, reference materials, notes of any kind, hats and hoodies and any kind of food or drink.

It was getting too complicated to keep the different policies of the many programs UA Testing Services work with straight. To make test-takers aware Testing Services will hang a 4 foot X 6 foot banner listing the policy on the entrances to Hotz Hall Room 115 (the paper/pencil testing room) and the Computer-Based Test Center, Hotz Hall Room 710. Good signage and spreading the word by other candidates will help in reducing this problem with all tests.

The examinees will be advised to place these items in their vehicle or return them to a parent or friend as the test center staff assumes no responsibility for lost or stolen items. In situations where this is not an option due to parking accommodations, lockers are provided so that students can lock their personal items. This practice greatly reduces the confusion and stress for both examinees and testing staff.

Also, all testing programs/companies will be contacted to request that this information to be included on the admission tickets.

Loss of Tests/Income**:** The changes in the tests, formats and schedules impacted the testing volumes and associated revenue generated by these tests here at the University. Testing Services established alternative sources of testing revenues to increase the office budget by acquiring new testing contracts. Three contracts were acquired, negotiated and signed in the Spring 2009 with different testing companies and testing for these new exams will begin soon.

An additional income will be generated through these new contracts for exams such as IELTS, DSST and Electrical Licensing Exam to make up for the loss of income from other tests. Last

year's 3 contracts with Kryterion, ISO-Quality Testing, and Castle companies brought Testing Services an additional $6000. As Testing Services is recognized, it will build more clientele and this income will increase.

Staff**:** There were no staff changes within the office this year. Although the skills required by Testing Services' staff are not commensurate with the pay received; there were no staff changes within the office. A new pay plan for classified employees was approved in the last legislative session and is scheduled for implementation on July 1st. However, because of the timing of this implementation and the economic conditions currently facing the University, full implementation of the pay plan cannot occur. It seems hopeful at this time that at least the only classified employee, Jacob London, will be paid a bit better later on.

Gail Mills and Jacob London have all the characteristics of ideal employees; dependability, honesty and integrity, willingness to work, and exhibit a positive and proactive attitude. Despite the low pay, their commitment to the department and students made it possible for Testing Services to attain goals and provide outstanding service to the University community. Their ability to assess a situation, seek multiple perspectives, gather more information if necessary, and identify key issues that need to be addressed has been instrumental to students and the department.

Although almost all jobs now require some basic understanding of computer hardware and software, especially word processing, spreadsheets, and email, Jacob's superior knowledge of technology has eliminated headaches and saved the office a tremendous amount. Testing Services is fortunate to have employed such excellent employees.

Testing Space**:** Classrooms in Kimpel Hall and computer labs in the Walton College of Business with over 75 seats/computers are normally used to support the large numbers of students who are required to test during peak times. Testing Services is told by the Walton College that this was the last year nursing students could be accommodated in the large computer lab at Walton.

With the exception in the month of June where Testing Services administers the most tests, demand for testing is highest between November and February (See Appendix B). The competition for space to administer tests continues to be a major challenge. Test sessions are scheduled using Testing Services' Computer-based Test Centers (CBT and GMAT) containing only 32 computers and paper-based testing seating 45 examinees. To support large state and national test administrations such as Praxis, tests are administered on Saturdays and Sundays in other buildings across campus. This year a total of 11 tests were administered on Sundays due to lack of space.

Equipment and Office Furniture Purchases**:** Beginning in 2005, ETS offered a grace period during which the required schedule for replacing testing stations was relaxed. Now they are transitioning back to the standard replacement schedule so that testing stations that are at least four years old from their original purchase date must be replaced. In 2009, ETS was to resume the 36-month replacement cycle specified in the ETS Computer-based Testing Agreement.

The CBT Center has testing stations that are over four years old. ETS notified Testing Services that all computers in the center need to be replaced by the end of 2008. Although the latest HP and Dell test station specifications were forwarded to Testing Services, hardware specifications required by ETS were outdated and not available for purchase anymore. Centers requiring an upgrade in 2009 were given an extension until new hardware requirements were available. Once the purchase is made, arrangements will be made for a site visit by a Prometric technician to complete the setup of new equipment.

With the purchase of new computers for the center, Testing Services will start administering MCAT again as these computers will meet the requirements for MCAT testing stations.

Appendix A

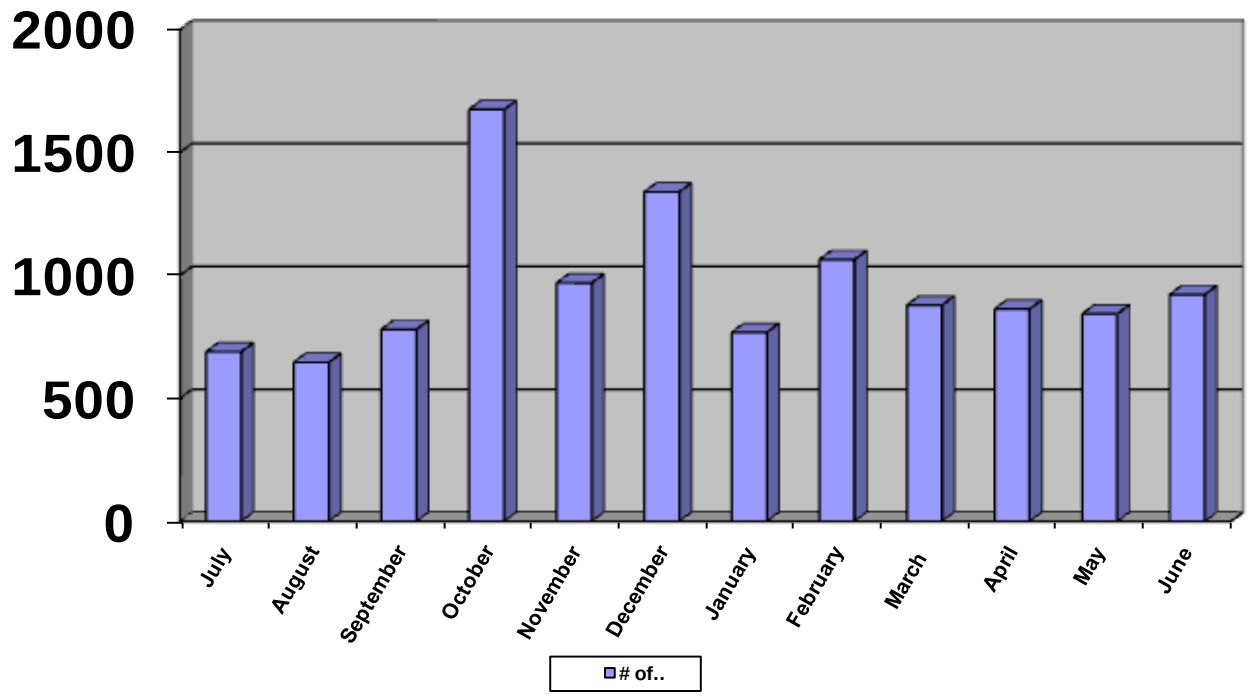
Testing Services is charged with the responsibility of administering standardized academic tests given at this institution. This office administers such academic tests as:

- ACT Assessment, national and residual versions
- Advanced Composition Exemption Exam
- Assessment Technologies Institute (ATI) for nursing students*
- ASSET**
- COMPASS*
- College Level Exam Program (CLEP)*
- Electrical Licensing Exam*
- English Language Placement Test (ELPT)
- Foreign Service Written Exam (FSWE)
- Fundamentals of Engineering (FE)
- Graduate Record Exam (GRE)*
- Graduate Record Exam (Subject)
- Graduate Management Admission Test (GMAT)*
- Grain Merchant Exam (GM)
- International English Language Testing System (IELTS)
- ISO Testing*
- Kryterion*
- Law School Admission Test (LSAT)
- Miller Analogies Test (MAT)*
- Multi-State Professional Responsibility Exam (MPRE)
- Math Placement Test (MPT)
- National Board of Professional Teaching Standards (NBPTS)*
- National Occupational Competency Testing Institute (NOCTI)*
- Pharmacy College Admission Test (PCAT)
- PRAXIS I (Pre-Professional Skills Test or PPST)*
- PRAXIS II (national teachers' exam)
- Reading Placement Test*
- SLPT (Spoken Language Proficiency Test)
- Test of English as a Foreign Language (TOEFL)*

- Test of English for International Communication (TOEIC)
- Texas Educator Certification* (TEC)
- Individual test administration based on special needs (disabilities)
- Correspondence tests for students who need to complete assessments for another institution
- Distance Learning Exams

  Exams for students receiving degrees from overseas institutions*Denotes computer-based exams **Was discontinued after spring 2008

- *Appendix B*
- *Number of Examinees Tested Per Month in 2008-09*



Appendix C

The assessment of students with disabilities has taken on considerable importance since the passing of the Americans with Disabilities Act (ADA) of 1990. Under ADA, a "disability is defined as (a) a physical or mental impairment that substantially limits one or more life activities, (b) a record of such an impairment, or (c) being regarded as having an impairment despite whether or not the impairment substantially limits major life activities." ADA requires that assessment of individuals with disabilities be performed with any reasonable accommodations being made.

Testing companies offer specialized administrations for examinees with common types of disabilities through test centers such as Testing Services here at the University. Depending on the disability, some accommodations permit continued administration in group settings; others require individual administration. For example, assessments may be available in enlarged print,

Braille, and audiocassette versions for those with visual disabilities. In these cases, time limits can be enforced or extended by authorization given to the office from the testing companies. Test takers may be given extra rest breaks, a reader, an amanuensis (a recorder), a sign language interpreter, allowance of a medical device in the testing room, convenient test taking locations and assessment times, distraction-free test environment, individual test administration, enlarged font on the PC monitor, and other accommodations as needed to meet the examinee's particular requirements. Accessibility to the testing site also needs to be considered.

The following special needs students were accommodated by Testing Services during the 2008-2009 Academic Year.

- Students with visual impairments
- Students with hearing impairments
- Students with learning disabilities
- Students with motor disabilities
- Students with emotional disabilities

Office of the Vice Provost for Research

Vice Provost for Research

Dean and Vice Provost Collis R. Geren continued to serve in FY2009 as the Vice Chair of the Arkansas EPSCoR Committee and as the head of the Arkansas Department of Defense EPSCoR (DEPSCoR) and Department of Energy EPSCoR efforts. He served on the Executive Committees of University of Arkansas Technology Development Foundation and the Mack Blackwell Transportation Center. Dr. Geren managed the interactions of the University's faculty with Van Scoyoc and Associates. Dr. Geren managed the fellowship programs of the Graduate School including the Benjamin Franklin Lever and those resulting from the Walton endowment. In FY 2009, the Vice Provost continued his service on the Board of the Arkansas Science and Technology Authority and the Board of the Arkansas Science, Technology, Engineering, and Mathematics (STEM) Coalition. Recently, he has been asked to serve on the Arkansas Discovery Network Board and as University of Arkansas representative to the Arkansas Research Alliance Research Officers Group.

Associate Vice Provost for Research

Professor Dennis W. Brewer continued as Associate Vice Provost for Research as a half-time position during the academic year and full-time during the summer months. Dr. Brewer teaches one course each semester as part of his half-time position in the Department of Mathematical Sciences.

Dr. Brewer made several trips during FY08, where he was primarily representing the Vice Provost for Research at meetings sponsored by university consortia and funding agencies. These meetings included

- Challenges and Tensions in International Research Collaborations, Minneapolis, Minnesota

- Arkansas Association of Public Universities, Little Rock, Arkansas
- NASA Space Grant Consortium Board meetings (6), Little Rock, Arkansas
- Arkansas Space Grant Symposium, Winrock Conference Center, Morrilton, Arkansas

Dr. Brewer was responsible during FY08 for special initiatives and projects related to

- Facilitating the ongoing operation of the High Performance Computing Center
- Representing (with Dr. Geren) the University of Arkansas on the NASA EPSCoR Space Grant Committee
- Serving on the Advisory Council for the Great Plains Network
- Introducing the Graduate Professional Learning Series at Graduate School Orientation
- Managing a research project funded by the Walton Family Foundation to establish quantitative water quality standards for Beaver Lake
- Managing the university's response to funding solicitations which limit the number of proposal submitted by a single campus
- Nominating faculty for the Ralph Powe Award sponsored by Oak Ridge Associated Universities and the Pew Scholar Award
- Chairing an advisory committee for the Office of Research and Sponsored Programs
- Providing administrative support for the Research Council, especially as it relates to inquiries into cases of research misconduct
- Writing and obtaining approval for a new Research and Scholarly Misconduct Policy
- Assisting in the establishment of new research centers and maintaining accurate records of existing centers
- Organizing and conducting three workshops for graduate students on topics related to the responsible conduct of research
- Co-chairing (with Dr. Pat Koski) a committee on a graduate certificate in Preparing Future Faculty
- Serving as co-principal investigator on a funded NSF Noyce Scholarship Program for prospective math and science teachers
- Generally facilitating and nurturing cross-campus research collaboration and funding competitiveness
- Managing information technology support for all units reporting to the Vice Provost for Research and Dean of the Graduate School
- Managing online education in the responsible conduct of research for graduate students
- Administering and evaluating a survey (with Dr. Ronna Turner) of campus research services
- Assisting faculty and students with software tools to detect plagiarism.
- Serving on the Provost Search Committee.
- Serving as Graduate School representative to the University of Arkansas Sustainability Council.
- Serving on a search committee for the associate head of the High Performance Computing Center
- Serving on the Goldwater Scholar Nominee Selection Committee
- Serving on a committee to create a Professional Science Masters Degree in Sustainability
- Serving on a committee to select the John A. White Student Research Collaboration Awards

Assistant Vice Provost for Research - Finance and Administration

During fiscal year 2009, Ms. Gail G. Piha continued in her role as Assistant Vice Provost.

In the 2008-2009 year, Ms Piha

- attended monthly college business/financial officer lunch meetings which are held to promote better communication between academic colleges and schools.
- continued to serve on the Graduate School's Staff Performance Evaluation committee, renamed the PAC Committee (Performance Advisory Committee).
- served as the United Way representative for all units reporting to the Dean of the Graduate School/Vice Provost for Research.
- continued working on electronic records/scanning for the Graduate School, working closely with admissions. Two additional admissions positions were proposed and approved during the budget process for FY09 to facilitate the future needs of data entry and scanning.

During fiscal year 2009, Mr. Michael D. Rau continued in his role as Accounting Tech II. He was promoted to Administrative Assistant II as of March 1, 2009.

In the 2008-2009 year,

- Mr. Michael Rau provided all administrative and accounting support for Ms. Piha as well as for the Director of Graduate Fellowships, Ms. Vicky Hartwell. Mr. Rau also managed the accounting for all sponsored students which involved the removal of class charges on sponsored students' account, ensuring that charges were posted correctly in BASIS and for generating invoices to sponsoring agencies.
- Mr. Rau was selected the Employee of the First Quarter for 2008-2009 by the Staff Senate in Category III: Technical/Para-Professional.
- As part of the IT responsibilities, Mr. Rau managed the IT Inventory and handled all IT purchasing until his replacement was hired.

Ms. Erica A. Yeung was hired as the Accounting Tech II as of April 7, 2009.

For the remainder of the 2008-2009 year,

- Ms. Erica Yeung provided all administrative and accounting support for Ms. Piha as well as for the Director of Graduate Fellowships, Ms. Vicky Hartwell. Ms. Yeung also managed the accounting for all sponsored students which involved the removal of class charges on sponsored students' account, ensuring that charges were posted correctly in BASIS and for generating invoices to sponsoring agencies.
- As part of the IT responsibilities, Ms. Erica Yeung managed the IT Inventory and handled all IT purchasing. In FY09, a total of
    - $24,783.05 was spent on hardware,
    - $46,573.60 was spent on software,
    - $8,879.11 was spent on toner, and
    - $10,475.52 was spent on accessories/miscellaneous.

Survey Research Center

Projects

The projects completed and undertaken by the Survey Research Center (SRC) during fiscal year 2008 to 2009 are listed in Table 1. The SRC engaged in 29 projects during the year. The staff completely administered 20 surveys during the year (69% of the projects) and wrote 13 reports for 45 percent of the projects. The SRC entered data as part of 34 percent of all the projects, analyzed data as the focus of one project and drew University sample for University administrators on two projects a total of four times. The organization did preliminary work on seven projects during 2008 to 2009 and followed up on four projects.

Table 1 Projects Begun and/or Concluded in 2008 to 2009

Projects	**Types of Investigators**
Surveys	
University of Arkansas	
Statewide Political Survey	Faculty, University of Arkansas
Survey of Residents in Urban Areas of a Regional Water District	Faculty and two extra-university partners
Survey of Businesses in Urban Areas of a Regional Water District	Faculty and two extra-university partners
Survey of Undergraduate Alumni	Department, University of Arkansas
Survey of Undergraduate Alumni, Start-up Phase	Department, University of Arkansas
Survey of Graduate Alumni	Department, University of Arkansas
Development of a questionnaire for an alumni survey	School, University of Arkansas
Survey of Farmers and Other Producers Who Sell at Farmers' Markets	Faculty, Extension Service/UA College
Evaluations of Participants in and Alumni of a Summer Study, 2nd Year	Two faculty, University of Arkansas, External funding
National Survey of a Specific Type of Manager	Two faculty, University of Arkansas & Mack Blackwell Center for Rural Transportation
Survey about Demand for and Services Offered during a Particular Set of UA Sporting Events	Administrator, University of Arkansas
Survey of Particular County Extension Agents in Arkansas on Preferences for Information Provision	University of Arkansas Extension Service Administrator and Specialist
Survey of Farmers and Others Who Provide Particular Services	Joint project between faculty in two departments in a College and the Arkansas Extension Service
Continuation of Survey of Regional Science Teachers for Interest in Graduate Studies, *gratis*	Faculty, University of Arkansas
Survey of Specific Curriculum in the United States	Faculty, University of Arkansas, External and Internal Funding

Projects	Types of Investigators
Attempting to Find a Feasible Way to Survey Alumni Regularly for Accreditation Purposes	Graduate School
Attempted Statewide Survey on Various Topics	
Non-profit Organizations	
Evaluation of capacity of nonprofit leaders in NWA and their needs for additional capacity building 2009	Foundation
Survey of residents regarding a large regional project	National nonprofit and state affiliate
NWA Omnibus Survey 2009 on topics:	
Public transportation	Nonprofit
Offerings of a public service medium	Nonprofit
Data Entry	
Data from one year's evaluation of teaching methods	University of Arkansas Faculty
Data Provision	
Selection of samples from the University of Arkansas population of students	Administrators from one University administrative unit
Data Warehouse-Administrative	Two data selections
Data Analysis	
NWA Survey on Various Topics, May/June 2009, analysis of data for one client	
Analysis of three years' pre- and post-class evaluations of distance education techniques	University of Arkansas Faculty
Public transportation	Nonprofit
Offerings of a public service medium	Nonprofit
Evaluation	
Evaluation of a literacy program in Benton County, 2nd year report	Two non-profits
Evaluation of a literacy program in Benton County, 1st part of 3rd year	Two non-profits
Evaluation of a literacy program in Washington County, 3rd phase report	Non-profit
Evaluation of programs offered by a program to benefit Hispanic residents of NW Arkansas, 1st year	Non-profit
Evaluation of a Website of Legal Information for	Non-profit and University of Arkansas

Projects	Types of Investigators
Nonprofit Organizations, 3rd year	Faculty
Evaluation of a Website of Legal Information for Nonprofit Organizations - Maintenance only, 4th year	
Evaluation of a program to train medical interpreters	Non-profit
Evaluation of a training program for non-profit leaders, 3rd year	Non-profit
Evaluation of a training program for non-profit leaders, 4th year	Non-profit
Evaluation of projects to enhance preparedness for and success in elementary school , 3rd year report	Government – School
Evaluation of projects to enhance preparedness for and success in elementary school , 4th year start & interim report	Government – School

Effects of the SRC's Research Results

The research results generated via the SRC have been used to:

- Help understand roles of symbolic racism in and national:
    - Ford, Pearl K., Angie Maxwell and Todd Shields. "What's the Matter With Arkansas?, Symbolic Racism and 2008 Presidential Candidate Support." *Presidential Studies Quarterly*. Forthcoming 2010.
    - Second article in preparation.
- Help understand attitudes *vis a vis* LGBT politics and policy.
    - Barth, Jay and Janine Parry. "Political Culture, Public Opinion, and Policy (Non) Diffusion: The Case of Gay- and Lesbian-Related *Issues in Arkansas."* *Social Science Quarterly*, 90, no. 2 (2009): 309-325.
    - Barth, Jay and Janine Parry. "2 > 1 + 1? The Impact of Contact with Gay and Lesbian Couples on Attitudes about Gays/Lesbians and Gay-Related Policies." *Politics & Policy*, 37, no. 1 (2009): 31-50.
- Contribute to faculty career development.
- Inform citizens of Arkansas about political platforms, candidates and referenda in the November 2008 elections. The SRC's predictions about the presidential contest were closer than those of any other organization in a recent compilation;
- Help formulate educational efforts and policies regarding water from the major source of water of NW Arkansas;
- Contribute to the understanding of the use and effects of cell phone sample in survey research of individuals and households;
- Contribute to an understanding of the well-being of residents of NW Arkansas which in turn influences how major donor agencies allocate their funds;
- Provide information for a regional agency, which provides services throughout Benton and Washington County, to inform funders, board members, political leaders and the public about need for and funding for this service;
- Collect the data for a graduate student's thesis on an important agricultural topic;

- Attract teachers to expanding graduate programs at the University of Arkansas;
- Develop and initiate implementation of an 8-point action plan to change what a group of Extension specialists do and how they do it;
- Help seven departments at the University renew accreditation;
- Help seven departments better understand their strengths and weaknesses and the career paths, thus, needs of their alumni;
- Convince funders of the importance of and success of funded programs;
- Save PIs time in summarizing the highlights and opportunities for growth in their programs;
- Improve the teamwork development program used with a large local agency that operates under a lot of pressure and has safety issues;
- Improve advising at the University of Arkansas;
- Provide sample so that students' health could be better measured;
- Contribute to the well-being of women in a region of a developing country, and may influence policy country-wide.

Professional Contributions

At the International Field Directors and Technologies Conference in May 2009, the SRC:

- Presented research findings on research methods involved with using cell telephone sample for telephone surveys, and
- Facilitated a session related to training of interviewers and telephone supervisors.

Client Critiques of the SRC's Work

Clients of about 22 of the 55 completed projects from 2007 – 2008 and 29 from 2008 – 2009 have evaluated the SRC were evaluated during 2008 – 2009. Furthermore, it seems onerous to evaluate every year when the service is somewhat repetitious and the initial evaluation is very positive. The evaluations are usually held with Dr. Koski and Dr. Longstreth or Noel Sharif after projects have finished. The evaluations are very positive overall. Some examples follow.

Advantages Cited by Clients (Similar Comments Are Grouped)

<u>Telephone Surveys</u>

- The SRC collected more than twice the usual number of responses for the Arkansas Poll in 2008 in about 1.5 the amount of time. Economies of scale were achieved through interviewer efficiency. These were very much appreciated.
- The SRC accurately predicted the major votes in the November 2008 elections, except for the one related to adoption. Among likely voters, the Arkansas Poll predicted that
  - the lottery vote within 0.1% of the actual results; and
  - McCain would win over Obama by 15 percentage points. Although the results with 20% favoring McCain, the Poll's predictions were closer than those of any other poll – a very positive note.
- The SRC was able to work with the questions of a young faculty member. The team was very pleased that the SRC was able to accommodate these questions.
  - They especially appreciated the SRC having field tested these questions so

thoroughly.
    - These questions posed problems, so the SRC reported the problems as quickly as possible and experimented with their author, PI and other team members to revise and eliminate questions carefully.
    - Consequently, the percentage of partially completed questionnaires resumed its normal level and respondent complaints dropped to a minimum
    - The field test also succeeded in correcting a misperception of at least one interviewer thanks partly to the time the PI spent at the SRC listening to the field tests; the SRC acted quickly to correct this misperception.
    - The PI was impressed that the SRC garnered IRB approval allowing the study about how public opinion relates to demographic characteristics of callers. Kim Gillow, project manager, has worked hard to obtain permission of interviewers to use their demographic data for this purpose. Her efforts are applauded by the PI.
    - Cell phone data were used for the first time on the Arkansas Poll. The PI, who had required some convincing, appreciated this effort. It was very successful.
    - The SRC's administers the Poll much more easily than during its first few years and the PI appreciates this.
- ❖ Another client finds that the NW Arkansas Omnibus survey was a good, reliable and consistent way to collect data over time.
    - They were interested in geo-coding responses and thought that the SRC did about as good a job in collecting such data as was possible.
- ❖ The local politicians who use the results of the survey understand the survey and how they can use it and really understand what they need.
    - The survey was done in a very timely manner.
    - Findings were congruent with the previous year's finding.
    - Kim and Molly are both very professional and easy to work with.
    - This client plans to use the SRC again for future survey needs.
- ❖ In soliciting participants for a focus group from a professional association, a higher rate of participants solicited by the SRC actually participated than in the focus group the client arranged.
    - The PI was able to learn the process and therefore, will be able to help future graduate students more effectively.
- ❖ One PI claimed that s/he received revealing and interesting information from the survey results, and believes it was more effective to have used an independent party (SRC) than to have used faculty to conduct these interviews because this PI thought that this particular group of respondents was able to be more forthright with SRC interviewers.
    - The PI appreciated the time table estimate that the SRC provided up front. The SRC mostly met the timelines throughout the project.
    - The PI liked the way the SRC conceptualized and analyzed the questions.
    - Price was right; they got value for their money.
    - Service was very excellent and the PI wouldn't hesitate to work with the SRC again.

<u>Face-to-face/Self-administered Surveys</u>

- The faculty in charge of his/her department's alumni survey uses and appreciates the responses to the preparation and other career-related survey questions.

    - S/he especially appreciates the report: its narrative and statistical analyses of the results, including longitudinal data, and an interpretation.
    - S/he cuts some of the wording and pastes it directly into his/her accreditation document and so that's very helpful.
- The alumni survey developed and administered by the SRC garnered a much larger response rate than did the one developed and administered earlier by the department.
    - They especially appreciate the development of the survey
    - It was administered by both mail and web. Having both was crucial in the case of these alumni because one is more kinesthetic and the other more computer oriented.
- One department's accreditation chair indicated that the accreditation reviewer considered it the best survey he/she/the accreditation agency had ever seen. S/hHe requested a copy and, although the UA faculty recommended the SRC to the reviewer.
    - The department used the findings in its accreditation report.

<u>Web Surveys</u>

- Client found the communication with SRC staff to be excellent, even when making adjustments to the survey or protocol.
    - Client was very happy with the report.
    - Plan to work with the SRC again in three years.
- Survey was done within the time needed.
    - Survey findings kept this taskforce on track.

<u>Evaluations</u>

- Client judges the report as "Excellent!" and thanks the SRC, and believed the report would foster appreciation and communication with the program officer.
- The report was so thorough and well written that they submitted it directly as part of their report to the funder.
    - The PIs' relationship with the SRC staff was great.
    - The PIs improved their program for students as a result of the survey's findings.
        - SRC updated the second year's survey to reflect the changed program.
- SRC developed good questions and used the book that the PI wanted to employ.
    - The SRC went over and above to evaluate, especially with a particular group.
    - In future, hopefully we can work together because the quality of information is better than what this PI can get by himself.
    - Even though response rates were far from 100%, the responses show how the program affected participants. In particular, "participants could say things on the survey they didn't feel could say otherwise. It served to peel back the first layer of skin."
    - Some leaders of this agency have asked the PI to work with their teams; the PI supplied the leaders with some information which helps them to understand and work with their teams.
    - This was a tough group with whom to work, but the leaders and PI "…feel good about what transpired. [This agency is] implementing policies" based on what was learned.
    - The PI plans to submit another proposal to conduct more training and would

include the SRC as the evaluator. The PI looks forward to working with us in the future.

Other Services

- The SRC did exactly what was asked: reached regional science teachers within budget.
    - Obtained the data and other mundane work of contacting teachers via letter and to be answered on web or postcard.
    - SRC staff introduced the PI to the University's other resources which helped in the project and the PI's larger efforts. This saved the PI much time and energy.
- Appreciated the SRC's presence at new faculty orientation.
- Sample data were provided in sufficient time for the national survey in which this UA unit was participating. The sample accurately reflected the population of students to be studied.

- In developing a survey and preparing it for this client to administer in a different country in a language other than English,
    - SRC helped PI think about the health-related topics including sewers as well as word-smithing.
    - SRC translators translated the data when it was entered.
    - SRC was fast in entering the data and returning the results.
    - The PI translated this questionnaire, but would allow the SRC staff to do so in the future and leave him-/herself only the job of improving the translation.
    - The PI analyzed the data, but appreciated the SRC's help in using SPSS;
    - The PI reported findings to the country's leaders.

How the SRC Could Improve Its Services

- Although the SRC really missed the voter approval of the adoption referendum in November 2008, numerous factors over which neither the Poll's PI nor the SRC had control. The Poll's results were very congruent, however, with related data collected in previous years.
    - It does instruct all of us, however, that if the goal is to predict the outcome of the election, questions constructed from complex and convoluted referenda, may need to be written analogously, but if the goal is to determine what the voters actually prefer at a given point in time, it is better to write the question clearly and in a straightforward manner so that respondents are better able to understand what is being asked.
- The NW Arkansas Omnibus Survey could be improved by oversampling Latino households and/or employing cell phone data. Therefore, the 2009 NWA Omnibus Survey did so.
- In the future, key local politicians need to be brought in to review questions and become thoroughly familiar with it, as was done in its first year. The SRC would gladly have done this, but the agency's budget was very limited and so they requested that this process be eliminated. In so doing, however, they realized the need for it.
- Instead of just receiving means and frequencies at the end of the NWA Omnibus Survey, it would be good to have a written report. (That is available, but for an extra charge.)

- Advertise the SRC's marketing services to the campus.
- The SRC is serving numerous clients simultaneously, so sometimes the report has been delayed, but the SRC provided a draft so that the client could work while the report was being finished. He has received everything needed in time for using it.
- Although the report takes a while, the analyses and narrative are worth the wait.
- The only thing that could be improved is the cost of the survey. Departments cannot afford the alumni survey.
    - If the SRC could find a way for the department to administer the survey, but the SRC to analyze the data and report the findings, the survey would have lower direct costs.
    - They'd like to find a way to make the survey sustainable, because they find it to be very useful.
- The department would like to shorten its alumni survey, and will work to do so.
- The alumni survey report was late; too few employers answered.
- Only a small fraction of participants solicited for two focus groups showed up. This has not happened previously in such solicitations. This caused the SRC to review methods used and make at least one change in such surveys in the future. The strong economy may have influenced this outcome as well.
- It took the SRC a long time to provide quotes for this PI, but the PI kept changing his/her mind; a graduate committee was involved and they asked for a lot more than they had budget for.
- The SRC analyzed the data by a geographic indicator that the PI had not intended, but not by the intended one. This may have resulted from incomplete communication, but the SRC now knows that this particular agency has a specific geographic measure and can request it.
- The PI had to ask twice for a summary of research methods.
- In one particularly intensive type of training the PI believes it's more realistic to wait two or so weeks after the experience to obtain feedback about changes the participants believe they made.

Progress on Goals Set for 2008 to 2009, Including Improvements Made

1) The top goal of the SRC is to serve the campus community, especially faculty.
    a) In 2008 – 2009, the SRC Director and Research Assistant introduced the SRC during new faculty orientation and the Director and Assistant Director during graduate student orientation.
    b) Approximately 66 percent of the projects done by the SRC in 2008 – 2009 were done for faculty, graduate students, administrators, departments or Cooperative Extension specialists and/or agents from the University of Arkansas. At least 17 University faculty and one graduate student were involved in the 29 projects[5] on which the SRC worked this year. In addition, work was done for 6 University administrators, four Cooperative Extension specialists and/or administrators and eight department chairs. Thus, a total of 26 faculty, graduate students, administrators, departments (department chairs), or

[5] Some projects contain more than one survey and some were begun last year, but the data were analyzed this year.

Cooperative Extension specialists, program leaders, administrators or agents have been served.

2) Serve more graduate students
   a) Service to graduate students declined in 2008 – 2009 from three in 2007 – 2008 to one.
3) Continue the two omnibus surveys and how best to market them
   a) Arkansas Omnibus Survey
      i) Strategy of writing and using return postcards was tried for the second time. This proved to be less effective than hoped, except that it saved some time. Efforts were likely thwarted partially by the recession, so it is too early to judge the efficacy of this method.
   b) The NWA Omnibus Survey was conducted.
      i) The surveys offer University educators and administrators, government agencies and nonprofits excellent means for collecting data quite inexpensively.
      ii) They offer the SRC opportunities for publicity
      iii) In 2008 – 2009, the level of interest in NW Arkansas was insufficient to make the NW Arkansas Omnibus Survey cost effective. In selling the surveys, SRC staff spend hours contacting and re-contacting faculty, state agency administrators and nonprofit leaders and/or publicists and thus inform them that the SRC exists and what services it can offer.
      iv) At least two new ideas will be tried in 2009 – 2010.
4) Seek new level of projects
   a) SRC conducted more complicated projects this year than in any year in the past, including a national level project. Search for larger, more sophisticated projects will continue.
5) Personnel
   a) Decide on the assistant director's responsibilities and possibilities
      i) Progress has been made.
   b) Continue training the Research Project Analyst
      i) Much effort was expended here.
   c) Replace the graduating computer technician and train the replacement.
      i) Done, but the replacement has recently his graduate funding and now must be replaced.
   d) Need a website manager
      i) This has been secondary to other more pressing work.
6) Update and organize website
   a) Some, but too little progress was made here.

Employees

The SRC committed to the University of Arkansas that it would contribute to the education of the University's students. Each student, former students and/or community members is trained on the tasks on which he or she works. Training is on-going. Students and community members are encouraged to constantly develop their skills. Numbers and types of students and other hourly employees the SRC employed during academic year 2008 – 2009 are listed in Table 2.

Table 2 Number and types of hourly employees during 2008 - 2009

	Regular hourly employees		**Temporary Hourly Employees**		**Total**
Semester/Year	Students	Community Members	Students	Community Members	
July 1, 2008 – June 30, 2009	12	2	54	25	93

Appendix: Publications and Presentations 2007-08

The compendium of publications and presentations by faculty members at the University of Arkansas is compiled as a separate volume and can be accessed from the Graduate School website.