

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

**Annual Report  
Fiscal Year 2007**

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## Executive Summary

Total **sponsored program awards** for FY2007 totaled \$57,585,804, representing a decrease of 20.4 percent compared to FY2006, and thereby returning to almost the same level as FY2005. The composition of FY2007 awards by funding source included \$37,624,928 (65%) from federal sources, \$ 8,323,657 (15%) from state sources, and \$11,637,219 (20%) from other funding sources such as industry and private foundations.

The Office of Research Support and Sponsored Programs (RSSP) **processed 764 proposals** and requests for continuation of multi-year awards in FY2007, constituting a total funding request of \$166,479,200, a 1.0 percent increase in requested funding as compared to FY2006. This includes requests of \$135,886,776 (82%) for federal funding, \$12,802,167 (8%) for state funding and \$17,790,257 (11%) for other types of funding.

RSSP and the Office of the Vice Provost for Research co-sponsored workshops for investigators, students, and administrators on compliance with **export control regulations**. The workshops were conducted by Elizabeth Peters, J.D., partner in the law firm of Hogan and Hartson, LLC. Funds have been approved to hire a new compliance officer in FY08 whose duties will include export control.

The Office of Technology Licensing reported **gross licensing income** of \$404,378 in FY07, an increase of 1.8% over the previous year. The University of Arkansas, Fayetteville and the Division of Agriculture were awarded 17 patents in FY07, the largest number in the last nine years.

**Graduate School enrollment** was 3136 in fall 2006 compared to 3084 in fall 2005, a 1.7% increase. **Doctoral enrollment** increased from 922 to 1026 in the same time period, a 11.3% increase. Since Fall 2001, doctoral enrollment has grown 45% compared to 13.5% growth in the total student body and essentially 0% growth in faculty.

A total of 115 **doctoral degrees** were awarded during the 2006-07 academic year compared with 134 the previous year. This represents the lowest output since 2003-04. The university may have reached a saturation point in its ability to educate doctoral students with current resources.

The total number of **African-American, Hispanic-American, and Native-American** graduate students increased from 292 (Fall 2005) to 307 (Fall 2006) and now comprises 12.1% of the domestic graduate student population.

Enrollment in **interdisciplinary degree programs** administered by the Graduate School has more than doubled since 2001 (from 85 to 189) and collectively awarded 20% of the PhD degrees in the 2007 UA graduating class.

In 2006-07 there were 104 **Doctoral Academy Fellows** and 53 **Distinguished Doctoral Fellows**. Seventy-one graduate students who contributed to the diversity of their programs held **Benjamin Franklin Lever fellowships**.

The **Office of Program Assessment** completed its second full academic year in FY07 under the direction of Dr. William Warnock. Degree programs were reviewed in seven departments. The Office supplied data and documents for the visit by the North Central Accreditation Commission and will play a central role in responding to the accreditation review.

The Office of Graduate Recruitment and the Associate Vice Provost for Research hosted six seminars in the **Graduate Student Professional Learning Series** during AY 06-07. The seminars focused on the professional preparation of faculty. The Graduate School will offer the first full-semester course on this topic in Fall 2007.

The **George Washington Carver Project** returned to FY05 participation levels with 20 students representing 8 minority-serving institutions in FY07. This compares to 32 students from 22 institutions in FY06 and 18 students from 11 institutions in FY05.

The **Ph.D. program in Public Policy** had an enrollment of 62 students, including 11 African-American students, in Fall 2006. The program is quite competitive, accepting only about one-third of those students who apply.

The **Microelectronics-Photonics** (mircoEP) Graduate programs have enrolled 147 students of which 137 have earned degrees or are still in the program. Of this group, 21% are women and 18% are African-American. Successful, diverse graduate programs are a critical component of federal grant proposals for research and education. Since its inception in 1999, the microEP program has played a central educational role in securing grant funds totaling over \$9.5 million.

The interdisciplinary graduate programs in **Space and Planetary Sciences** expect an enrollment of 19 students in Fall 2007. This number includes one distinguished doctoral fellow, four doctoral academy fellows, and one NASA fellow.

Fifty-three students were enrolled in **Cell and Molecular Biology** graduate programs this year with twelve graduating; six earned M.S. degrees and six earned Ph.D. degrees (including anticipated Summer 2007 graduates).

Meighan Acuff Pendergrass and Cath McMahan became the first students to complete the **Graduate Certificate in Gerontology**. Ms. Pendergrass is an Exercise Instructor at the U of A-Fort Smith. Ms. McMahan is an Assistant Professor in the Department of Parks, Recreation, and Hospitality Administration at Arkansas Tech University.

Total sales in FY07 by the **University of Arkansas Press** were up 7% from the previous year.

The **Center for Mathematics and Science Education** has become a "front door" to the University of Arkansas for K-12 science educators with 1045 registered visitors in FY07.

During the past year, **Testing Services** administered more than 481 different test sessions and served over 12,000 students and prospective students who were attempting to satisfy admission/degree requirements at UA and other institutions.

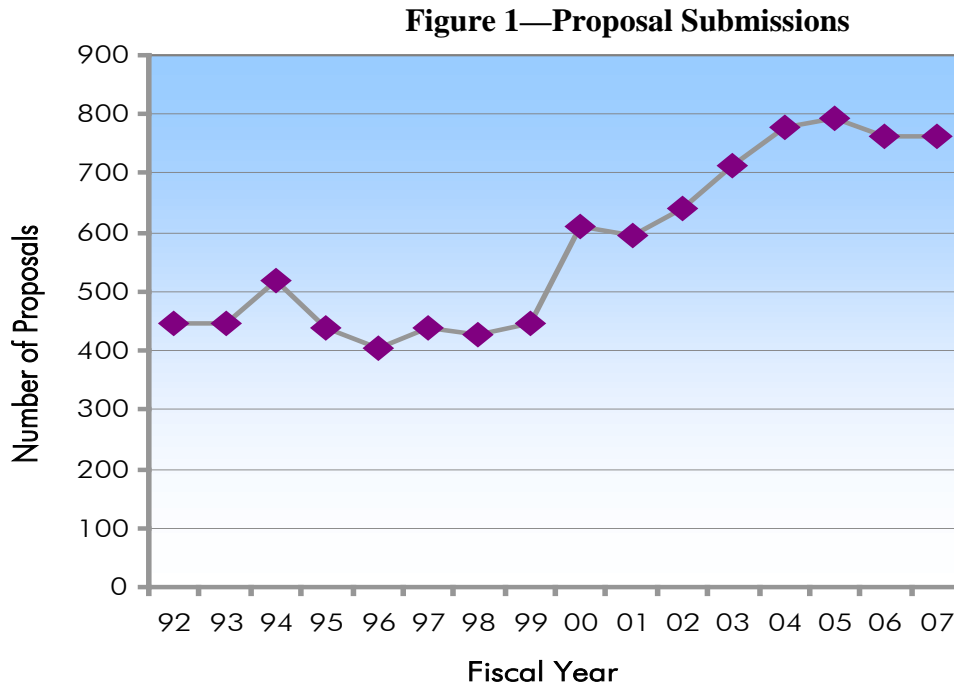
The **Survey Research Center** engaged in 45 projects during FY06. The staff administered 36 surveys during the year and wrote reports for 19 of the projects. These numbers are significant increases from a work level of 29 projects, 20 surveys, and 16 reports in FY06.

Among a number of **personnel changes**, Dr. Will Miller, founding director of the Ph.D. Program in Public Policy, left the university and Dr. Gary Ritter resigned as associate director. Dr. Brinck Kerr was appointed director of Public Policy with Dr. Valerie Hunt as associate director. Dr. Lisa Childs began her appointment as the university's first patent attorney on October 1. Mr. Scott Hancock resigned as director of the Office of Technology Licensing on May 15. A search for his replacement is underway. Ms. Iroshi Windwalker, a Certified IRB Professional, joined the RSSP staff as the Compliance Coordinator in April. An additional compliance coordinator position was approved and is now open. After an unfruitful search for a director of graduate recruitment, Ms. Lynn Mosesso, formerly director of graduate and international admissions, was appointed director of a combined Office of Graduate and International Admissions and Recruitment. Ms. Diane Cook assumed a new position as Director of Graduate Student Activities and Graduate School Relations in the Graduate School.

## Research Support and Sponsored Programs

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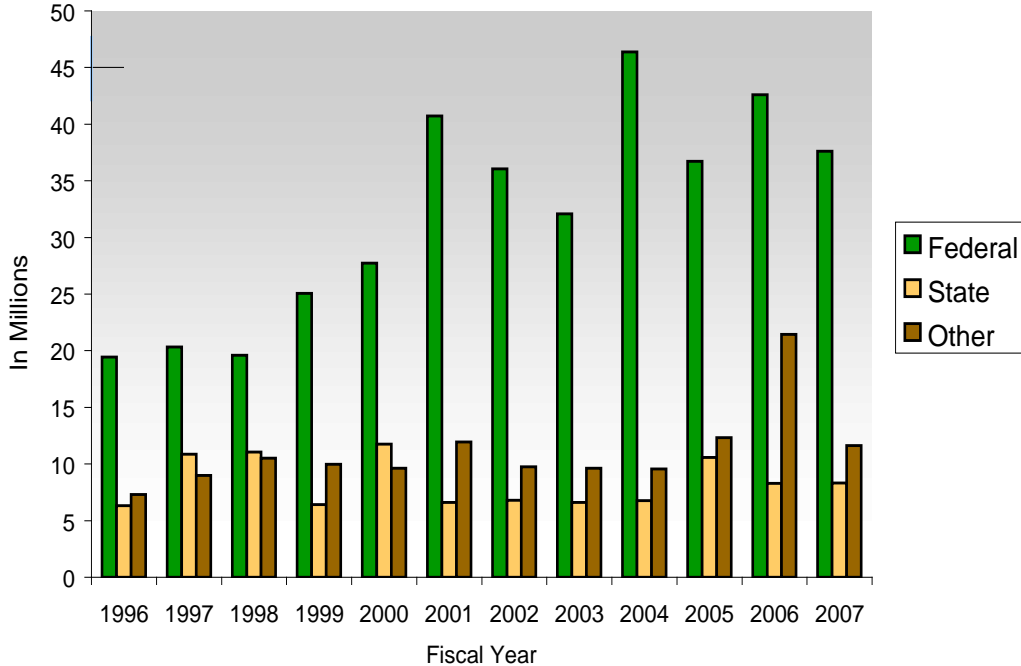
During FY2007 the number of proposal submissions to all sources was 764, an increase of less than 1.0 percent over the previous fiscal year. This includes 395 proposals (52%) submitted to the federal government, 216 proposals (28%) to state government, and 153 proposals (20%) to other funding sources such as private foundations and industry.

As shown in Table 1, total sponsored program funding for FY2007 was \$57,585,804. Of this amount, awards processed by RSSP accounted for \$44,708,952.

**Table 1. Summary of Awards by Funding Source – FY 2007**

|              | FEDERAL              | STATE               | OTHER                | TOTAL                |
|--------------|----------------------|---------------------|----------------------|----------------------|
| <b>AFLS</b>  | \$ 6,951,125         | \$ 131,843          | \$ 6,613,473         | \$ 13,696,441        |
| <b>ARCH</b>  | \$ 208,398           | \$ 831,800          | \$ 2,840             | \$ 1,043,038         |
| <b>ARSC</b>  | \$ 13,244,037        | \$ 2,150,723        | \$ 1,825,878         | \$ 17,220,638        |
| <b>EDUC</b>  | \$ 3,688,527         | \$ 2,087,288        | \$ 592,249           | \$ 6,368,064         |
| <b>ENGR</b>  | \$ 8,762,744         | \$ 607,631          | \$ 1,622,322         | \$ 10,992,697        |
| <b>GRAD</b>  | \$ 1,228,587         | \$ 116,522          | \$ 182,041           | \$ 1,527,150         |
| <b>LAW</b>   | \$ -                 | \$ 79,488           | \$ 38,365            | \$ 117,853           |
| <b>LIBR</b>  | \$ -                 | \$ -                | \$ -                 | \$ -                 |
| <b>VCAA</b>  | \$ 19,818            | \$ 22,000           | \$ 1,600             | \$ 43,418            |
| <b>VCFA</b>  | \$ 860,836           | \$ 2,254,015        | \$ -                 | \$ 3,114,851         |
| <b>VCSA</b>  | \$ 1,904,164         | \$ 32,222           | \$ 23,528            | \$ 1,959,914         |
| <b>WCOB</b>  | \$ 756,692           | \$ 10,125           | \$ 734,923           | \$ 1,501,740         |
| <b>TOTAL</b> | <b>\$ 37,624,928</b> | <b>\$ 8,323,657</b> | <b>\$ 11,637,219</b> | <b>\$ 57,585,804</b> |

**Figure 2. Award Trends by Source**



RSSP continues to work with InfoEd to update the services available through our research administration database. The installation and implementation dates for the Proposal Development module to allow electronic internal routing and approval of proposals are still uncertain at this time. InfoEd has been unable to resolve programming problems with the Proposal Development Module in spite of numerous upgrades to the system. (At the present time very few universities have implemented the new module. We are unable to estimate when the software may be reliable enough for implementation.)



In FY2006, RSSP initiated a pilot project to allow data mining of the Proposal Tracking Module at the unit level. User requests to join the pilot project were limited but the pilot was successful. This year, Kimberly Park, database administrator, revised training and user materials and access for data mining is now available to faculty and administrators upon request. Key goals for the InfoEd system will be to continue to provide accurate report information, improve compliance management, implement internal routing and approvals for proposals and compliance protocols (IRB and IACUC only), and provide additional reporting services to faculty and staff through direct contact with RSSP personnel or via RSSP's web page.

As in FY 2006, regulatory compliance requirements continue to require increased oversight and documentation. Ms. Iroshi Windwalker, a Certified IRB Professional, joined the RSSP staff as the Compliance Coordinator in April, 2007. She provides administrative support for IRB, Biosafety, and Radiation Safety in addition to working directly with faculty and students on protocol preparation and approvals.

Compliance with export regulations continues to be a significant concern for the University research community. Three investigators are now engaged in controlled activities and have filed Technology Control Plans with RSSP. We expect filings to increase in fiscal year 2008. RSSP and the Office of the Vice Provost for Research co-sponsored workshops for investigators, students, and administrators on compliance with export regulations. The workshops were conducted by Elizabeth Peters, J.D., partner in the law firm of Hogan and Hartson, LLC. With the assistance of Media Services, School of Continuing Education and Academic Outreach, the workshops were videotaped and are now available for use in training new faculty, staff and students.

The Institutional Review Board (IRB), which oversees human subjects research, continues to see significant increases in the number of new protocols and protocol continuations submitted for approval. The Compliance Coordinator is now distributing electronically all protocol expiration notices (to investigators) and all protocols (to IRB members for Expedited and/or Full IRB review).

The Institutional Animal Care and Use Committee (IACUC) completed its semi-annual reviews on schedule. There were no significant deficiencies or violations found. At the request of the Dale Bumpers College of Agricultural, Food and Life Sciences (AFLS), the IACUC assisted in the semi-annual reviews of the agricultural animal facilities. The IACUC also implemented mandatory training for all faculty, staff, and students engaged in research involving live, vertebrate animals. Starting with the fall semester of AY07-08, the Laboratory Animal Training Association (LATA), will provide this training via secure web services. Financial support for the LATA training is provided jointly by RSSP and AFLS.

## Office of Technology Licensing

### *Executive Summary*

The Office of Technology Licensing (OTL) executed five options and six licenses covering university intellectual property this year, and six of the deals were with Arkansas-based companies. The OTL also continued its support of the University of Arkansas Technology Development Foundation (UATDF) by assigning patent rights to significant technology, which led to UATDF consummating a licensing contract with an experienced IP marketing firm.

A new strategy for maximizing the benefits of technology licensing, while minimizing expenses, has been implemented. The new strategy calls for marketing new technologies before patenting. The new method should reduce the number of unlicensed patents – thereby reducing the amount of unsupported patent costs.

The University of Arkansas received 17 patents in FY07, the largest number in the last nine years. Twenty invention disclosures were received and 24 patent applications filed.

Gross licensing income rose 1.8% in FY07 to \$404,378. The OTL finished FY07 in the black but with far less positive margin than in FY06. A total of \$98,344 was remitted to inventors, and \$12,282 was remitted to the university for patenting and licensing support and professional services.

FY07 also saw a significant development for the OTL with the hiring of the University of Arkansas' first ever patent attorney. Dr. Lisa Childs has greatly added to the OTL's mission of protecting University intellectual property and by providing timely advice and support on patents, licenses, confidentiality agreements, and other legal questions.

Scott Hancock, the first Director of the Office of Technology Licensing, left the university in May 2007. A new director is expected to be hired soon.

### *Technology Licensing*

The OTL has responsibility for the Fayetteville campus and the Division of Agriculture. The OTL helps faculty to identify, protect, and commercialize intellectual property (IP) developed in their university research programs.

Faculty inventors are encouraged to contact the OTL before submitting a formal invention disclosure to discuss whether one is warranted. Formally submitting an invention disclosure begins a review process to determine the disposition of the IP. The OTL then guides the faculty inventors through the Patent & Copyright Committee review process. The OTL may introduce faculty inventors to private sector venture capital and to the UATDF. In the first case, private venture capital sources can explore with the inventors whether to form a spin-out company of which the inventor can be a founding member and perhaps serve as Chief Technology Officer. In the second case, a faculty inventor may consider working with the UATDF, a 501(3)(c)

organization that provides resources to validate technologies and enable further development and commercialization.

In FY07 the University of Arkansas, through the OTL, formally assigned significant IP rights to the UATDF based on a disclosure form by Dr. Ryan Tian. The disclosure has generated three patent applications to date. This new advance in nanotechnology and chemistry marks the first time that anyone has created macroscale objects from nanoscale materials. The technology has numerous possible applications including membrane catalysts, solar cell and energy applications, drug delivery, and others. This is the first technology to be assigned to the UATDF and is a milestone in its development. It is expected that income will result from this license that will go to support a validation fund for future IP from other inventors.

The OTL also:

- markets University IP by finding partners who will commercialize the technology.
- negotiates and monitors licenses for University IP.
- coordinates with the Office of Research Support and Sponsored Programs on intellectual property language within sponsored research agreements with private sector entities.
- negotiates confidentiality agreements to facilitate faculty discussions with prospective private sector research collaborations.
- manages IP reporting requirements to federal agencies under the Bayh-Dole Act and to private sector research sponsors in coordination with the Office of Research Support and Sponsored Programs.
- coordinates patent protection, filing, prosecution, and maintenance.
- manages fiduciary responsibilities under UA System Patent and Copyright Policy (Sections 210.1 and 210.2) by making bi-annual distribution of net licensing income to the inventors, the UA System, and the UAF campus.

#### *Performance for Fiscal Year 2007*

##### *License/Option Activity*

The OTL executed five options and six licenses covering university intellectual property. Five of the deals were with Arkansas-based companies. Three additional options resulted from sponsored research agreements with outside companies. The university also assigned patent rights to the UATDF for one invention. Two licenses were terminated due to non-performance.

In a fiscal-year-to-fiscal-year comparison, gross licensing income rose 1.8 % percent to \$404,378. Overall, income was not much different in FY07 than in FY06. The OTL continues to have a majority of its licenses with primarily local start-up companies, several of which are proceeding toward positive cash flow, but have not yet started to pay royalties.

As seen in Table 1, the percentage breakdown of licensing income by source is virtually unchanged in FY07 from FY06. The biggest producers in gross licensing income for FY07 are from the same licenses as in FY06 – patents covering the use of alum in poultry production provided 27% of the total, and animal health technology provided another 18% of income.

**Table 1. The Composition of Licensing Income in Fiscal Year 2007**

| College or Division | Examples of Technologies  | Percent Share |
|---------------------|---|---------------|
| Agriculture         | alum, avian vaccines, animal health, vineyard mechanization, biosensors   | 76.3 %        |
| Arts & Sciences     | nanocrystals, superconducting compounds, <i>ab initio</i> drug design computational software, assays, microfluidic devices, | 17.4 %        |
| Engineering         | environmental quality, roadbed inspection equipment, nanoparticle coatings, ethanol conversion, electronics packaging       | 5.4 %         |
| Miscellaneous       | educational publications, displays, exhaust screen  | 0.9 %         |

*Intellectual Property Assets*

The Fayetteville campus and the Division of Agriculture received seventeen U.S. utility patents in FY07.

- U.S. Patent 7,073,822 for Cable Steering System
- U.S. Patent 7,105,051 for Semiconductor Nanocrystals
- U.S. Patent 7,112,545 for Crystalline GaAs
- U.S. Patent 7,135,585 for Fungicidal Amides and Carboxamides
- U.S. Patent 7,141,260 for Removal of Seed Pericarp
- U.S. Patent 7,141,261 for Pectin from Soybeans
- U.S. Patent 7,144,486 for Integrated Electrodes
- U.S. Patent 7,147,441 for Redox Magnetohydrodynamics
- U.S. Patent 7,153,703 for Inorganic Nanocrystals
- U.S. Patent 7,160,525 for Synthesis of Noble Metal Nanocrystals
- U.S. Patent 7,160,580 for Edible Antimicrobial Films
- U.S. Patent 7,169,272 for Recessed Disk Microelectrodes

U.S. Patent 7,174,709 for Turboscreen  
 U.S. Patent 7,202,143 for Formation of Large-Grain Silicon  
 U.S. Patent 7,202,404 for Fungicidal Amides and Carboxamides  
 U.S. Patent 7,205,331 for Fungicidal Amides and Carboxamides  
 U.S. Patent 7,238,496 for Detection of Salmonella

As FY07 ended, the portfolio contained 106 issued U.S. utility patents, 16 plant patents, 17 foreign patents (mostly covering superconducting compounds and animal immune complex vaccine technologies), and 96 pending U.S. utility patent applications. In line with the goal of rationalizing the portfolio, the campus abandoned four issued U.S. patents. Lack of commercialization prospects and technology or market shifts also prompted the OTL to discontinue prosecution of nine U.S. and six foreign patent applications.

As shown in Table 2 below, gross legal fees were \$407,538, which include payments to outside counsel and patent office fees associated with applications and maintenance of rights. This exceeded gross licensing income by \$3,160 (less than 1%). The OTL paid \$255,124 in unreimbursed legal fees while option holders and licensees reimbursed \$137,414 of the gross legal fees and an outside attorney reimbursed \$7,500, bringing the reimbursed fees to \$144,914 for a reimbursement rate of nearly 36%. Thus, the OTL did not meet the benchmark of 40% recommended by the Association of University Technology Managers (AUTM), but the reimbursement rate and absolute dollars reimbursed were the second best in the last eight years.

The OTL made royalty distributions to inventors in the amount of \$98,344 and remitted \$12,282 to the UA System for patenting and licensing support and professional services. The balance went to support the OTL and Office of the Vice Provost for Research. The OTL had no expenses for litigation in FY07.

**Table 2. Intellectual Property Protection Expenses**

| <b>Fiscal Year</b> | <b>Legal Expenses</b> | <b>Reimbursed Legal Expenses</b> | <b>Percent Reimbursed</b> | <b>Net OTL Patenting Costs</b> |
|--------------------|-----------------------|----------------------------------|---------------------------|--------------------------------|
| 2000               | 172,205.60            | 37,753.27                        | 21.9                      | 134,452.33                     |
| 2001               | 230,317.63            | 65,614.90                        | 28.5                      | 164,702.73                     |
| 2002               | 383,559.68            | 71,967.68                        | 19.3                      | 311,592.00                     |
| 2003               | 399,313.57            | 140,369.16                       | 35.2                      | 258,944.41                     |
| 2004               | 327,514.55            | 122,609.49                       | 37.4                      | 204,905.06                     |
| 2005               | 249,789.79            | 73,025.98                        | 29.2                      | 176,763.81                     |
| 2006               | 335,330.61            | 162,361.98                       | 48.4                      | 172,968.63                     |
| 2007               | 407,538.77            | 144,914.47                       | 35.6                      | 262,624.30                     |

Inventors submitted twenty disclosures in FY07, a nearly fifty percent reduction from FY06. However, as seen below in Table 3, a record number of patents issued (seventeen) and a four-year high of twenty-four applications were filed. Because more patents were issued, government

issue fees increased as well (\$17,000 for FY07 vs. \$5,000 for FY06), as well as attorney fees (not tabulated).

**Table 3. Summary Statistics – Intellectual Property Pipeline**

| <b>Fiscal Year</b> | <b>Invention Disclosures</b> | <b>U.S. Patent Applications</b> | <b>Issued U.S. Patents</b> |
|--------------------|------------------------------|---------------------------------|----------------------------|
| 1999               | 26                           | 27                              | 13                         |
| 2000               | 12                           | 18                              | 9                          |
| 2001               | 30                           | 31                              | 10                         |
| 2002               | 25                           | 37                              | 16                         |
| 2003               | 27                           | 33                              | 8                          |
| 2004               | 31                           | 23                              | 11                         |
| 2005               | 39                           | 22                              | 12                         |
| 2006               | 39                           | 20                              | 5                          |
| 2007               | 20                           | 24                              | 17                         |

*New Strategy for Managing Patent Costs*

In FY07 the OTL instituted a new practice to reduce patent costs and increase the return of patent investment to the university. This new practice focuses on marketing an invention *before* significant patent costs are incurred. If no industry sponsor is found, then patent protection is not sought. This should reduce the university’s unreimbursed legal fees. Of course the university does risk not protecting technology that may, in the future, be valuable, but this practice is a more prudent way of managing limited resources.

Another strategy for identifying potentially important inventors entails using an outside evaluator. The OTL is experimenting with this technique and will consider whether to continue using it.

*Quantitative Measures of FY 2007 Performance*

**Goal:** Balance Patent & Copyright expenses with available licensing income.

**Result:** Goal achieved.

**Goal:** Work with the faculty Patent and Copyright Committee to make early and informed go/no-go decisions regarding patenting of invention disclosures so that finite budget resources will flow to technologies holding the promise of higher returns on investment.

**Result:** Goal achieved. Each invention disclosure presented to the P & C Committee was investigated for its likely ability to be commercialized.

**Goal:** Maintain the patenting cost reimbursement ratio at or above the AUTM standard of 40 percent.

**Result:** Goal not achieved. Patent cost reimbursement ratio for FY07 was almost 36%. The ratio would have been maintained at about 40 percent had two companies reimbursed the University as previously agreed.

**Goal:** Generate \$400,000 in gross licensing income, effectively the same level as in FY06. Said projection is based on scheduled drop-off in certain license milestone payments.

**Result:** Goal achieved. Gross licensing income for FY07 was \$407,538.

**Goal:** Execute five license agreements with Arkansas companies.

**Result:** Goal not achieved. Two licenses and two amendments to a license were negotiated with Arkansas companies in FY07. However, eight patents and applications were licensed and four were optioned with Arkansas companies.

**Goal:** Provide faculty inventors an annual status report on the technologies that the OTL is actively working to assess/protect/market. Use the InfoEd technology transfer module and database to generate a report showing patent status, revenues, expenses, commercialization agreements.

**Result:** Goal not achieved. The InfoEd module upgrade resulted in OTL not being able to easily retrieve this information.

**Goal:** Become current in meeting reporting requirements on inventions made with federal funds, in compliance with the Bayh-Dole Act.

**Result:** Goal achieved.

**Goal:** Revise the invention disclosure form in consultation with the Patent & Copyright Committee.

**Result:** Goal achieved. The new invention disclosure form has been revised and is in use.

#### *Other achievements*

In FY07, the OTL continued its relationship with a local technology accelerator company that specializes in starting and developing businesses based on university technology. The OTL has licensed or optioned 29 university technologies to ten local start-up companies associated with the technology accelerator. Four of these companies have reported their first sales in FY07. This is important to the success of OTL not only because the licensing agreements require royalty payments to the university, but also because the university has equity in the companies.

In October of FY07, the OTL was fortunate to begin working with Dr. Lisa Childs, a licensed patent attorney. Working closely with the OTL, Dr. Childs provides advice and support on the wording of contracts such as licenses, confidentiality agreements, assignments and other legal documents. Dr. Childs also provides oversight and support with regard to the OTL's dealings with outside patent attorneys. With Dr. Childs' help, the OTL is now on a much stronger footing when dealing with the myriad legal issues that are part of technology licensing.

Even though the OTL was strengthened by the arrival of Dr. Childs, the OTL also suffered the loss of its first ever Director and friend, Scott Hancock. Scott left the OTL and the University of Arkansas in May to take a new job at SUNY Binghamton in upstate New York. Scott had been the Director of the OTL for the last five years and had a great deal of experience and a large number of personal connections that will be sorely missed. Scott pioneered the existence of the OTL as a separate entity from the Office of Research Support and Sponsored Programs and initiated many of the most important changes that the OTL has undergone.

At the time of this report, several prospects for the OTL Director have been interviewed. The new director will take over an office with a fresh team, as no one will have had more than three years of experience in the OTL. New ideas, combined with professional capabilities, will strengthen the OTL and provide the basis for future growth and support for the university's IP commercialization goals.

### *Goals for FY08*

- Continue to balance Patent & Copyright expenses with available licensing income.
- Hire a new OTL Director.
- Achieve the patenting cost reimbursement ratio at or above the AUTM standard of 40 percent.
- Execute agreements with Arkansas companies for three intellectual properties.
- Remain current in meeting reporting requirements on inventions made with federal funds, in compliance with the Bayh-Dole Act.
- Improve information management to generate reports tracking IP expenses and income by college.
- Complete internal OTL audit of existing intellectual property.
- Update information posted on the OTL Website.

### *Guiding Objectives*

- Support RSSP and UATDF on intellectual property issues.
- Continue to educate students, faculty, department heads, and UAF and Division of Agriculture management on the benefits of participating in the university's technology transfer program.
- Increase faculty participation in the disclosure process so that the inventor community grows.
- Use internal and external resources and expertise to improve OTL recommendations to the Patent & Copyright Committee on invention disclosures.
- Market disclosures before patenting to enable decision-making based on likelihood of commercialization.
- Deepen business and research relationships of licensees with university and faculty inventors.
- Consider the impact of licensee's location on the university's desire to improve Arkansas' knowledge-based economy.



- Educate stakeholders statewide about the positive impact technology transfer is making in Arkansas, *e.g.*, through press releases about newly issued patents or license agreements.

### *Looking Ahead*

The OTL will continue to market university IP to companies that can commercialize the technology, thus bringing to the public the benefits of new knowledge produced at the University of Arkansas. Where possible and prudent, the OTL will continue to give weight to Arkansas companies in a conscious effort to improve the economic well-being of the state, providing jobs, services and products to the taxpayers and income to the state government in new tax revenue. A new Director of Technology Licensing will soon join the OTL, adding new skills and expertise. The OTL will continue to refine its information management, will expand its marketing contacts with industry, and will work to find productive licenses for every disclosure possible.

## **Research Services**

Both the Glass and Machine Shops served a variety of departments and students. These shops provided services to eighteen UA departments, four universities (in addition to UA) and five private businesses during FY07. Both shops are experiencing an increased request 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. Peng, Chemistry and Biochemistry: In conjunction with Glass Shop, designed and fabricated a multi-pass, UV light reflector, cuvette holder.
- Dr. Fant, Industrial Engineering: Designed and constructed a vibration limiting, massive, iron table and frame for Dr. Fant's robot research.
- Civil Engineering: Fabricated a bridge for students entering the A.S.C.E Steel Bridge and Concrete competition.
- Facilities Management: Repaired equipment in their Carpenter Shop and consulted on repairs for Zones A, D, and F.
- Dr. Proctor, Food Science: In conjunction with Glass Shop helped to design and construct illumination unit for testing nutrient value in oil.

### *Glassblowing Services*

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

- Dr. Kelvin Wang, Civil Engineering: Created a dual thickness precision window

for Dr. Wang's Highway Scoping Van.

- Dr. Peng, Chemistry and Biochemistry: Designed and fabricated light cell that would fit on the end of a special UV flashlight.
- Dr. Koeppe, Chemistry and Biochemistry: Supplied specialized cuvettes with lids to his lab at a rate of about a hundred per year.
- Dr. Xie, HIDECC: Built quartz thermocouple for semiconductor research.
- Dr. McIntosh, Chemistry and Biochemistry: Repaired a very large quantity of research glassware broken in transport to new facility.
- Dr. Karen Steelman, University of Central Arkansas: Removed samples and rebuilt 4 manifolds for reuse.

*Revenues Generated in FY07*

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 any associated shipping and materials charges. While the Machine Shop saw an overall increase of 1%, the Glass Shop showed a decrease of 35%. Overall there was a decrease of 22% in total recharge/billing to clients from FY06.

|              | Jobs | Shipping & Materials | Labor     | Total Income | Change from FY06 |
|--------------|------|----------------------|-----------|--------------|------------------|
| Glass Shop   | 93   | \$2975               | \$ 6265   | \$9240       | - 35%            |
| Machine Shop | 45   | \$1,319              | \$ 7,160  | \$ 8479      | 1%               |
| Total        | 138  | \$4294               | \$ 13,425 | \$17,719     | - 22%            |

**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 Animal Sciences Building (AFLS), has been in operation since early 2000. During FY07, of the 13 rooms that can potentially house animals (primarily the commonly used small rodents and rabbits), 5 were in continuous use, with 2 additional rooms used for experimental procedures (exercise training on treadmills) and 2 rooms were occupied intermittently. There were four investigators who have been the primary users during FY07, three (3) of whom use mice and one (1) of whom uses Golden Syrian hamsters. The new projects (intermittent use) used mice. The investigators were charged a per diem rate for the care of their animals. A total of \$16, 948 in per diem charges was collected for the FY07 accounting period. The facility has continued to cover direct costs (feed, bedding, cage-cleaning chemicals, routine maintenance costs and labor incurred for the care of the animals) as a result of the per diem charges to facility users.

## 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 [www.uark.edu/grad](http://www.uark.edu/grad). We also included the Mission Statement and Core Values in the *2006-07 Graduate School Catalog*.

### *Significant Achievements and Changes*

There were several achievements and changes in the Graduate School during the 2006-07 year:

- We combined our offices of admissions and recruitment into one new department, Graduate and International Recruitment and Admissions, which is headed by Lynn Mosesso;
- We added the position of Director of Graduate Student Activities and Graduate School Relations, which was filled by Diane Cook;
- We hosted 20 Carver students from eight institutions;
- Catherine Cunningham received the UA Employee of the Year award;
- We implemented scanning of historical admissions documents;
- We implemented an on-line inquiry card for prospective students and a self-managed application packet;
- We began an international student recruitment plan which included international travel;
- We welcomed the Bush/Clinton Fulbright Tsunami Relief Initiative students who met former President Clinton; and we hosted a retreat for the students from both the University of Arkansas and Texas A & M University;
- We initiated a graduate student luncheon seminar series; facilitated the creation of graduate student support groups; and helped support the creation of our first course in the Preparing Future Faculty program, to be offered in the Fall 2007;
- Sandy Bramlet left the office; Jeremy Turner replaced her as office manager;
- Jeremy Turner's position in the admissions office was filled by Cassandra Shaffer;
- Keukeu Abdullah's position was upgraded to a Management Project Analyst I;
- Elizabeth Mitchell was hired to replace Ty Keller and her position was upgraded to an Administrative Office Supervisor;
- Pitram Chowdhury was hired to replace David Edwards, and was in turn replaced by Lindsey Conaway;
- Mike Miller was hired to replace Donna Coleman;
- Jerrick Hornbeak left the office in June;
- Dr. Will Miller left the University; Dr. Brinck Kerr became Director of the Public Policy program and Dr. Valerie Hunt has accepted the position of Associate Director of the Public Policy program, effective in August 2007.

### *Progress and Accomplishments*

#### *Applications, Admissions, and Recruitment*

Please note that activities related to the the Office of Graduate Recruitment and International Admissions and the George Washington Carver Research Program are reported in separate sections of this document.

*Enrollment and Graduation*

Graduate School enrollment is given in Table 1. Over-all enrollment increased in Fall 2006, both in numbers and in percentage of the total University headcount, but the rate of growth was the lowest in the past few years.

TABLE 1: Graduate Enrollment

|           | Master's | Specialist | Doctoral | Non-Degree | Total | % Change | Total Univ Enroll | % Univ Enroll |
|-----------|----------|------------|----------|------------|-------|----------|-------------------|---------------|
| Fall 2006 | 1,967    | 18         | 1,026    | 125        | 3,136 | 1.69%    | 17,926            | 17.49%        |
| Fall 2005 | 2,007    | 10         | 922      | 145        | 3,084 | 3.87%    | 17,821            | 17.31%        |
| Fall 2004 | 1,954    | 16         | 877      | 122        | 2,969 | 3.88%    | 17,269            | 17.19%        |
| Fall 2003 | 1,803    | 6          | 852      | 197        | 2,858 | 6.25%    | 16,449            | 17.37%        |
| Fall 2002 | 1,737    | 23         | 754      | 176        | 2,690 | 5.41%    | 16,035            | 16.78%        |
| Fall 2001 | 1,669    | 10         | 706      | 167        | 2,552 | 2.82%    | 15,795            | 16.16%        |
| Fall 2000 | 1,586    | 16         | 676      | 204        | 2,482 |          | 15,396            | 16.12%        |

Table 2 gives the number of graduate degrees awarded for the classes of 2001 through 2007. As can be seen, estimated over-all degree production was lower in 2006-07 than in the previous year.

TABLE 2: Graduate Degrees Awarded

|          | Master's | Specialist | Doctoral | Total |
|----------|----------|------------|----------|-------|
| 2006-07* | 922      | 1          | 115      | 1,038 |
| 2005-06  | 987      | 3          | 134      | 1,124 |
| 2004-05  | 909      | 3          | 145      | 1,057 |
| 2003-04  | 833      | 12         | 110      | 955   |
| 2002-03  | 803      | 4          | 120      | 927   |
| 2001-02  | 736      | 5          | 106      | 847   |
| 2000-01  | 737      | 9          | 90       | 836   |

\*Estimated

One of the goals of the Graduate School is to increase both the enrollment and the graduation of students from under-represented groups so that these rates mirror the population of the state who are eligible to enter graduate programs (i.e. those who hold at least a baccalaureate degree). Table 3 gives the enrollment of graduate students by race and ethnicity. Our target enrollment rates are: African American, 8.0%; Asian American, 1.4%, Hispanic American, 1.0%; and Native American/Alaskan Native, 0.5%. In the Fall 2006, we met or exceeded these goals.

TABLE 3: Enrollment of Graduate Students by Race and Ethnicity

| Total     | Native American | African American | Asian American | Hispanic American | Total Minority | Total Domestic |
|-----------|-----------------|------------------|----------------|-------------------|----------------|----------------|
| Fall 2006 | 40              | 208              | 46             | 59                | 353            | 2,532          |
|           | 1.58%           | 8.21%            | 1.82%          | 2.33%             | 13.94%         |                |
| Fall 2005 | 33              | 201              | 48             | 58                | 340            | 2,489          |
|           | 1.33%           | 8.08%            | 1.93%          | 2.33%             | 13.66%         |                |
| Fall 2004 | 42              | 177              | 46             | 46                | 311            | 2,379          |
|           | 1.77%           | 7.44%            | 1.93%          | 1.93%             | 13.07%         |                |
| Fall 2003 | 38              | 197              | 65             | 61                | 361            | 2,304          |
|           | 1.65%           | 8.55%            | 2.82%          | 2.65%             | 15.67%         |                |
| Fall 2002 | 50              | 190              | 52             | 49                | 341            | 2,163          |
|           | 2.31%           | 8.78%            | 2.40%          | 2.27%             | 15.77%         |                |
| Fall 2001 | 46              | 164              | 48             | 37                | 295            | 2,049          |
|           | 2.24%           | 8.00%            | 2.34%          | 1.81%             | 14.40%         |                |
| Fall 2000 | 41              | 143              | 47             | 36                | 267            | 2,059          |
|           | 1.99%           | 6.95%            | 2.28%          | 1.75%             | 12.97%         |                |

Tables 4 and 5 report master's and doctoral degrees, respectively. (Note: These data are not yet available for the graduation year 2007).

TABLE 4: Master's Degrees Earned by African-American, Asian-American, Hispanic-American and Native-American Students, as Percentages of Degrees Earned by all Domestic Graduate Students

| Master's |         | Native American | African American | Asian American | Hispanic American | White  | Unknown | Total Domestic |
|----------|---------|-----------------|------------------|----------------|-------------------|--------|---------|----------------|
| 2005-06  | n       | 8               | 64               | 18             | 14                | 709    | 31      | 844            |
|          | % Dom   | 0.95%           | 7.58%            | 2.13%          | 1.66%             | 84.00% | 3.67%   |                |
|          | % Total | 0.81%           | 6.48%            | 1.82%          | 1.42%             | 71.83% | 3.14%   | 85.51%         |
| 2004-05  | n       | 11              | 78               | 21             | 15                | 634    | 51      | 810            |
|          | % Dom   | 1.36%           | 9.63%            | 2.59%          | 1.85%             | 78.27% | 6.30%   |                |
|          | % Total | 1.21%           | 8.58%            | 2.31%          | 1.65%             | 69.75% | 5.61%   | 89.11%         |

|         |         |       |        |       |       |        |       |        |
|---------|---------|-------|--------|-------|-------|--------|-------|--------|
| 2003-04 | n       | 9     | 60     | 18    | 17    | 583    | 5     | 692    |
|         | % Dom   | 1.30% | 8.67%  | 2.60% | 2.46% | 84.25% | 0.72% |        |
|         | % Total | 1.08% | 7.20%  | 2.16% | 2.04% | 69.99% | 0.60% | 83.07% |
| 2002-03 | n       | 12    | 68     | 19    | 15    | 555    | 2     | 671    |
|         | % Dom   | 1.79% | 10.13% | 2.83% | 2.24% | 82.71% | 0.30% |        |
|         | % Total | 1.49% | 8.47%  | 2.37% | 1.87% | 69.12% | 0.25% | 83.56% |
| 2001-02 | n       | 9     | 70     | 16    | 8     | 517    | 3     | 623    |
|         | % Dom   | 1.44% | 11.24% | 2.57% | 1.28% | 82.99% | 0.48% |        |
|         | % Total | 1.22% | 9.51%  | 2.17% | 1.09% | 70.24% | 0.41% | 84.65% |
| 2000-01 | n       | 17    | 43     | 19    | 15    | 540    | 0     | 634    |
|         | % Dom   | 2.68% | 6.78%  | 3.00% | 2.37% | 85.17% | 0.00% |        |
|         | % Total | 2.31% | 5.83%  | 2.58% | 2.04% | 73.27% | 0.00% | 86.02% |

TABLE 5: Doctoral Degrees Earned by African-American, Asian-American, Hispanic-American and Native-American Students, as Percentages of Degrees Earned by all Domestic Graduate Students

| Doctoral |         | Native American | African American | Asian American | Hispanic American | White  | Unknown | Total Domestic |
|----------|---------|-----------------|------------------|----------------|-------------------|--------|---------|----------------|
| 2005-06  | n       | 0               | 9                | 2              | 3                 | 79     | 1       | 94             |
|          | % Dom   | 0.00%           | 9.57%            | 2.13%          | 3.19%             | 84.04% | 1.06%   |                |
|          | % Total | 0.00%           | 6.72%            | 1.49%          | 2.24%             | 58.96% | 0.75%   | 70.15%         |
| 2004-05  | n       | 3               | 6                | 5              | 4                 | 83     | 15      | 116            |
|          | % Dom   | 2.59%           | 5.17%            | 4.31%          | 3.45%             | 71.55% | 12.93%  |                |
|          | % Total | 2.07%           | 4.14%            | 3.45%          | 2.76%             | 57.24% | 10.34%  | 80.00%         |
| 2003-04  | n       | 3               | 5                | 4              | 1                 | 60     | 0       | 73             |
|          | % Dom   | 4.11%           | 6.85%            | 5.48%          | 1.37%             | 82.19% | 0.00%   |                |
|          | % Total | 2.73%           | 4.55%            | 3.64%          | 0.91%             | 54.55% | 0.00%   | 66.36%         |
| 2002-03  | n       | 1               | 8                | 3              | 1                 | 71     | 1       | 85             |
|          | % Dom   | 1.18%           | 9.41%            | 3.53%          | 1.18%             | 83.53% | 1.18%   |                |
|          | % Total | 0.83%           | 6.67%            | 2.50%          | 0.83%             | 59.17% | 0.83%   | 70.83%         |
| 2001-02  | n       | 1               | 3                | 4              | 2                 | 74     | 0       | 84             |
|          | % Dom   | 1.19%           | 3.57%            | 4.76%          | 2.38%             | 88.10% | 0.00%   |                |
|          | % Total | 0.94%           | 2.83%            | 3.77%          | 1.89%             | 69.81% | 0.00%   | 79.25%         |
| 2000-01  | n       | 2               | 5                | 3              | 1                 | 56     | 0       | 67             |
|          | % Dom   | 2.99%           | 7.46%            | 4.48%          | 1.49%             | 83.58% | 0.00%   |                |
|          | % Total | 2.22%           | 5.56%            | 3.33%          | 1.11%             | 62.22% | 0.00%   | 74.44%         |

The Graduate School also strives to assist with retaining graduate students to graduation. Table 6 provides retention rates.

TABLE 6: Retention by Race and Year

| Entering Year | African American | Asian American | Hispanic American | Native American | Caucasian |
|---------------|------------------|----------------|-------------------|-----------------|-----------|
| 2006          | 92.4%            | 100.0%         | 84.6%             | 90.9%           | 92.6%     |
| 2005          | 73.5%            | 73.1%          | 68.8%             | 73.3%           | 74.5%     |
| 2004          | 65.4%            | 72.4%          | 62.5%             | 23.1%           | 67.8%     |
| 2003          | 76.1%            | 58.6%          | 64.9%             | 64.0%           | 61.7%     |
| 2002          | 66.7%            | 76.2%          | 51.7%             | 45.5%           | 63.2%     |
| 2001          | 68.8%            | 66.7%          | 78.9%             | 71.0%           | 64.6%     |
| 2000          | 68.5%            | 64.7%          | 88.9%             | 58.3%           | 60.0%     |

### *Graduate Assistantships*

In the fall 2006, 1,251 students were on a graduate assistantship; 1,247 were on a graduate assistantship in the spring 2007.

### *On-going, yearly, and traditional activities*

The Graduate School continues to sponsor each year the workshop for graduate assistants presented by the Teaching and Faculty Support Center. In addition, in August of 2006, we offered the sixth annual orientation for new graduate students.

The Graduate Dean's Student Advisory Board continued to meet monthly throughout the year.

The Graduate School offered training to new graduate coordinators.

The Office of Graduate Recruitment again sponsored the Black Graduate Students Association.

Ms. Karla Clark once again took the leadership role in this year's Carver Project. This summer we hosted 20 students from eight institutions (Alcorn State University; Bennett College; Huston-Tillotson University; Langston University; Philander Smith College; Norfolk State University; University of Arkansas at Pine Bluff, Wiley College).

Dean Geren and Associate Dean Koski attended the annual meetings of the Council of Graduate Schools, the national professional association, in Washington, DC. Associate Dean Koski attended the annual meetings of the Conference of Southern Graduate Schools, in Chattanooga, TN. She also served as the Chair of the Membership Committee for the Conference of Southern Graduate Schools.

There are now 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. Table 7 shows the enrollment in each of these degree programs from Fall 2001 to Fall 2006; and Table 8 shows the graduation from each degree program from 2000-01 to 2005-06. We do not yet have the official graduation numbers for the 2007 graduation year. Each of our interdisciplinary programs continues to be very popular. In addition, Public Policy is the most diverse Ph.D. program on campus. Separate reports for each of the programs have been submitted.

TABLE 7: Enrollment in Interdisciplinary Degree Programs

|           | CEMBMS | CEMBPH | MEPHMS | MEPHPH | PUBPPH | SPACMS | SPACPH | TOTAL |
|-----------|--------|--------|--------|--------|--------|--------|--------|-------|
| Fall 2006 | 7      | 45     | 32     | 28     | 61     | 0      | 16     | 189   |
| 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 8: Graduation in Interdisciplinary Degree Programs

|         | CEMBMS | CEMBPH | MEPHMS | MEPHPH | PUBPPH | SPACMS | SPACPH | TOTAL |
|---------|--------|--------|--------|--------|--------|--------|--------|-------|
| 2005-06 | 7      | 6      | 7      | 5      | 10     | 1      | 1      | 37    |
| 2004-05 | 10     | 3      | 7      | 8      | 6      |        |        | 34    |
| 2003-04 | 4      | 2      | 8      | 2      | 1      |        |        | 17    |
| 2002-03 | 3      | 0      | 4      | 2      | 1      |        |        | 10    |
| 2001-02 | 1      | 0      | 7      | 0      | 0      |        |        | 8     |
| 2000-01 | 0      | 0      | 4      | 0      | 0      |        |        | 4     |
| TOTAL   | 25     | 11     | 37     | 17     | 18     | 1      | 1      | 110   |

Other accomplishments and on-going activities of Graduate School staff include, but are not limited to, the following:

- , Managing several offices, including the Office of Graduate and International Recruitment and Admissions; and the newly-created Office of Program Review;
- , Managing the periodic review of all degree programs;
- , Assisting with the *Graduate Student Professional Learning Series*;
- , Managing the functional aspects of ISIS; trouble shooting for ISIS issues;
- , Providing data to university staff and faculty as requested;
- , Serving on the Steering Committee and the Resource Committee of the ISIS project,
- , Processing all out-of-career registrations for undergraduate and graduate students;
- , Co-coordinating the All-University Commencement ceremony; and organizing all of the



aspects of commencement that specifically pertain to graduate students;  
 Serving on the Registration and Course Scheduling Coordinating Committee (RACSCCLs);  
 Assisting with the Clinton School;  
 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;  
 Over-seeing the application for and approval of graduate faculty status;  
 Preparing all of the material for the University Course and Programs Committee; preparing and posting the agenda and the minutes for the Committee;  
 Editing the *Graduate School Catalog*;  
 Preparing several reports (e.g. Peterson's Guide; GRE; NSF);  
 Serving as an *ex officio* member of the Faculty Senate, and reporting Graduate Council business to the Senate;  
 Processing and monitoring the admissions, academic progress, committee assignments, change of majors, and degree completions of all graduate students;  
 Processing and monitoring the tuition payments for all students on graduate assistantships or fellowships;  
 Processing and monitoring all applications for graduate faculty status;  
 Serving on the professional board and the users board of the Survey Research Center;  
 Serving on the Campus Council;  
 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;  
 Organizing the meetings of the Graduate Dean's Student Advisory Board;  
 Participating in the orientation for international students;  
 Organizing monthly meetings of the interdisciplinary program directors;  
 Organizing a team for the Susan G. Komen race;  
 and serving on a wide variety of other committees.

*One-time, beginning, or ending activities*

During 2006-07, we

- Initiated a series of luncheon seminars for graduate students, on topics such as "Stress and Time Management," "Dealing with Conflict," and "Finding Funding for Your Research."
- Facilitated the organization of graduate student support groups, which will begin in the Fall 2007;
- Implemented scanning of historical admissions documents;
- Implemented an on-line inquiry card for prospective students and a self-managed application packet;
- Began an international student recruitment plan which included international travel;
- Welcomed the Bush/Clinton Fulbright Tsunami Relief Initiative students who met former Preside Clinton; and hosted a retreat for the students from both the University of Arkansas

and Texas A & M University.

### *Actions by the Graduate Council*

In 2006-07, the Graduate Council approved:

- 26 program changes;
- Eight policy changes;
- 84 course changes;
- One new graduate certificate program and one new Ph.D. program;
- Two rule variances;
- Requests for changes in or new graduate faculty status.

### *Graduate Fellowships*

In fall 2006, 16 graduate students were awarded Distinguished Doctoral Fellowships. This brought the total number of Walton-funded distinguished doctoral fellows to 48, with an additional five non-Walton funded distinguished doctoral fellows. There were 47 new Walton-funded Doctoral Academy Fellowships awarded, which brought those totals to 92 Walton-funded doctoral academy fellows, five non-Walton funded doctoral academy fellows, and seven named doctoral academy fellows with a Walton match. There were eight Southern Regional Education Board doctoral fellows, and 71 Lever fellows from 31 degree programs.

All twelve-month doctoral fellows now have the option of receiving their monthly disbursement as a direct-deposit, rather than as a check mailed to them. This was an enhancement requested by the Graduate School and implemented in the fall by the Treasurer's Office. The Director of Graduate Fellowships requested and was granted the required security level in the student information system (ISIS) to enter all fellowships directly. Previously, fellowships were posted by the Scholarship Office in the Honors College, which posed an undue burden on that office's personnel. Fellowship postings and adjustments can now be done more efficiently, providing better service to the students.

The Graduate School continued its funding for doctoral fellowship candidate visits. This funding allow students from outside the geographic area an opportunity to visit Northwest Arkansas. These visits also provide the student and the department the opportunity to meet face-to-face to discuss the student's research objectives and the department's resources.

### *Caliber of Fellowship Students*

Distinguished Doctoral Fellows continue to be from the top 1% of all students who attend graduate school. Likewise, Doctoral Academy Fellows are from the top 5% of all students who attend graduate school. This year's doctoral fellows came not only from institutions in surrounding states, such as Auburn University, Oklahoma State University, Texas A & M University, and the University of Kansas, but also from the University of Arizona, the University of Florida, the University of Hawaii, and Barnard College.

Byron Winston, a first-year doctoral student in the environmental dynamics program and doctoral academy fellow, was awarded a USGS grant to study taste and odor problems associated with Beaver Lake, Northwest Arkansas' sole drinking water supply.

### **Office of Graduate and International Admissions and Recruitment**

#### Admissions Activities

(There are no Graduate School of Business applications included in these tables.)

#### DOMESTIC ACTIVITY

|             | <u>Apply</u>   | <u>Admit</u>   | <u>Deny</u>   | <u>Enroll</u>   | <u>Matriculation</u> |
|-------------|----------------|----------------|---------------|-----------------|----------------------|
| Fall 2005   | 1654           | 906            | 58            | 578             | 63.7%                |
| Fall 2006   | 1606           | 924            | 57            | 586             | 63.4%                |
| Change:     | -48<br>(2.9%)  | +18<br>(1.9%)  | -1            | +8<br>(1.38%)   |                      |
| Spring 2006 | 706            | 495            | 26            | 338             | 68.3%                |
| Spring 2007 | 746            | 549            | 24            | 408             | 74.3%                |
| Change:     | +40<br>(5.66%) | +54<br>(10.9%) | -2<br>(-7.7%) | +70<br>(20.7%)  |                      |
| Summer 2006 | 730            | 501            | 21            | 357             | 71.2%                |
| Summer 2007 | 674            | 459            | 19            | 306             | 66.6%                |
| Change:     | -56<br>(-7.7%) | -42<br>(-9.4%) | -2<br>(-9.6%) | -51<br>(-14.3%) |                      |

These data show a strong matriculation rate. There is a slight increase (1.38%) in enrolled students Fall 2006 compared to Fall 2005. Even though applications were down, admitted and enrolled students increased.

#### GRADUATE INTERNATIONAL ACTIVITY

|             | <u>Apply</u>   | <u>Admit</u>     | <u>Deny</u>     | <u>Enroll</u>  | <u>Matriculation</u> |
|-------------|----------------|------------------|-----------------|----------------|----------------------|
| Fall 2005   | 1047           | 414              | 274             | 143            | 34.5%                |
| Fall 2006   | 965            | 336              | 335             | 131            | 39%                  |
| Change:     | -82<br>(-8.9%) | -78<br>(-18.84%) | +61<br>(22.26%) | -12<br>(-8.4%) |                      |
| Spring 2006 | 423            | 138              | 137             | 48             | 34.8%                |
| Spring 2007 | 355            | 116              | 90              | 52             | 44.8%                |
| Change:     | -68<br>(-16%)  | -22<br>(-16%)    | -47<br>(-34.4%) | +4<br>(-8.4%)  |                      |

|             |          |         |        |       |       |
|-------------|----------|---------|--------|-------|-------|
| Summer 2006 | 62       | 26      | 5      | 14    | 53.8% |
| Summer 2007 | 54       | 31      | 4      | 15    | 48.3% |
| Change:     | -8       | +5      | -1     | +1    |       |
|             | (-12.1%) | (19.2%) | (-20%) | (+7%) |       |

These data show a very low matriculation rate for graduate international admits. Competition from other U.S. institutions, other countries, and awarding of assistantships are factors. The UA department denial rate continues to increase, with only one in three students being admitted. Fall 2006 saw a decrease in applications and admissions but a significant increase in denials. Twelve fewer students enrolled.

#### UNDERGRADUATE INTERNATIONAL ACTIVITY

|           | <u>Apply</u> | <u>Admit</u> | <u>Deny</u> | <u>Enroll</u> | <u>Matriculation</u> |
|-----------|--------------|--------------|-------------|---------------|----------------------|
| Fall 2005 | 309          | 150          | 9           | 83            | 55.3%                |
| Fall 2006 | 356          | 203          | 18          | 139           | 68.4%                |
| Change:   | +47          | +53          | +9          | +56           |                      |
|           | (+15.2%)     | (+35.3%)     | (+100%)     | (+67.4%)      |                      |

|             |        |         |        |         |        |
|-------------|--------|---------|--------|---------|--------|
| Spring 2006 | 233    | 73      | 18     | 48      | 65.75% |
| Spring 2007 | 140    | 70      | 6      | 50      | 71.4%  |
| Change:     | -93    | -3      | -12    | +2      |        |
|             | (-40%) | (-4.2%) | (-33%) | (+5.9%) |        |

|             |         |         |        |          |       |
|-------------|---------|---------|--------|----------|-------|
| Summer 2006 | 91      | 29      | 4      | 18       | 62%   |
| Summer 2007 | 59      | 22      | 1      | 16       | 72.7% |
| Change:     | -32     | -7      | -3     | -2       |       |
|             | (35.1%) | (24.1%) | (-75%) | (-11.1%) |       |

These data show a strong overall matriculation rate. Admissions were up 53 (35%) in fall 2006 and enrollment of newly admitted students increased by 56 (67%) over one year ago.

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

|                  | <b>2005</b> | <b>2006</b> | <b>Change</b> |
|------------------|-------------|-------------|---------------|
| Domestic GR      | 3090        | 3026        | -64 (-2%)     |
| International GR | 1532        | 1374        | -158 (-10.3%) |
| International UG | 633         | 555         | -78 (-12.3%)  |
| TOTAL:           | 5255        | 4955        | -300 (-5.7%)  |

- The Graduate and International Admissions Office (GIAO) processed 300 fewer applications for 2006 than 2005, a 5.7% decrease.

- The largest decline was in international applications which decreased 236 applications in 2006.

Overall graduate enrollment increased 1.6% from 3095 in Fall 2005 to 3146 in Fall 2006 (+51).

Fall 2006 saw a total of 949 international students enrolled, up from 888 in Fall 2005 (+ 61, 6.5%)

There were 102 countries represented on campus, up one from the previous year. The top five foreign countries represented are: India (231), China (91), Bolivia (60), Japan (59), and South Korea (38).

Fall 2006 saw a total of 75 sponsored students, up from 63 in Fall 2005 (+12). Thirteen sponsoring agencies placed students at the University of Arkansas.

### Unit Efforts

A domestic application template went live in late April 2004, however it has not been functioning since the Integrated Student Information System (ISIS) 8.9 upgrade. The international graduate application template was scheduled to go live in late July 2005. However, as of June 30, 2007, the international application template has not gone live and we are not able to use it. The application template decreases the initial data entry time for applications by one-third.

International workflow changed so that applications are being processed according to the alpha system.

The Graduate School ISIS unit continues to work with our office to create data clean-up queries. Queries are generated biweekly and given to Admissions to clean-up. These queries ensure the accuracy of ISIS admissions data and provide a good data entry training tool.

Work continues on the ISIS-SEVIS interface with progress being made.

Sponsored Student Programs arranged and held graduation dinners for sponsored students in November 2006 and April 2007.

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

The Director and Assistant Director of International Admissions continue to serve on the Board of Directors for the Foundation for the International Exchange of Students.

The GIAO implemented a self-managed application packet effective Spring 2007.

In August 2006, the Management Analyst I took over primary responsibility for I-20 issuance with the Assistant Director of International Admissions serving as back-up.

In October 2006, all international and domestic processing files were combined into one filing system to streamline workflow and aid in cross-training work studies and hourly assistants.

In October 2006, “No Files” were reorganized into one system.

In October 2006, bi-weekly admissions processing staff meetings were initiated.

In November 2006, the office implemented prospect card data entry for international recruiting fairs in Trinidad and Jamaica. All staff assisted in the data entry of several hundred prospect cards. An automated email response and follow-up communication plan was also implemented.

In April 2007, the staff met with First Year Experience Office to review Orientation issues and develop a procedure to minimize last-minute transfer credit/registration/orientation issues for international undergraduate students.

In May 2007, the staff implemented scanning of “history” files beginning with undergraduate international students enrolling in Fall 2003.

The Assistant Directors of Admission continue to serve as Graduate School team captains for Race for the Cure.

In May 2007, the Graduate and International letters and forms were moved to the shared directory so that all admissions processing staff could access the letters and any updates to letters/forms could be implemented simultaneously for all staff’s immediate access.

Recruitment unit efforts:

- Generated a write-up system to give work study students "strikes" when needed.
- Implemented new system for work study students work flow, which helps them self-manage as well as allows the supervisor to monitor progress.
- Re-organized filing system.
- Re-organized storage space.
- Tweaked accounting system to include more detail regarding transactions.

The following forms were revised:

- Degree Award Notice form
- Admissions file checklist form
- “Quick Answers for Prospective Students” brochure
- Undergraduate Advising Centers contact information sheet
- Graduate Application for Admission
- International Undergraduate Application for Admission
- Request for Exception to Graduate School Admissions form
- Combined Daily Processing Status form and Weekly Activity Report into one form
- Operations Management application for admission
- Overview of Credentials Required for Admission for various countries

- Bolivian, Caribbean, and Dimitris Perrotis College of Agricultural Sciences Tuition Advantage flyers
- All international graduate and undergraduate admissions letters
- 2007-2008 Estimated Academic Cost Sheet for international applicants

The following forms were created:

- Graduate/International Admissions folder with photographs for all admission packets
- Monthly admission Status Report to be submitted to Director
- TOEFL score comparison chart to include the internet based TOEFL
- Overview of Credentials Required for Admission for various countries
- Recruitment pre-travel, post-travel, and signature request forms.

Dickson Annex physical office reorganization:

- The Director moved to 106 Ozark Hall.
- A scanning station and work area was created in unit 7 downstairs
- The assistant director of international admissions moved into the office vacated by the Director
- The international credential and transfer credit evaluator moved and no longer shares an office. The international library was moved to this office.
- The assistant director of domestic admissions was moved to a larger office she will share with the hourly Operations Management application processor.

### Admission Policy Changes

On December 14, 2006 the UA Graduate Council approved the following admission policy change: Effective Fall 2007: For students meeting the grade average requirements of the UA Graduate School, three year foreign degree holders will be sent to the academic department for an admissions decision.

- Three-year degrees must be the first degree designed to lead to graduate admission in the country of origin.
- Graduate Admissions committee will review program curriculum and assess students' readiness for graduate studies in the same field. Admissions decisions will be made on a case-by-case basis.

### Staff Highlights

The Staff Senate Scholarship and Awards Committee honored Catherine Cunningham as Employee of the 4<sup>th</sup> Quarter and Employee of the Year for 2005. Catherine was honored at the Employee Banquet in October, 2006.

*Position upgrades:*

- Keukeu Abdullah was promoted to management analyst I in January, 2007.
- Elizabeth Mitchell was promoted to Administrative Office Supervisor in March, 2007.

### *Changes:*

In December, 2006, the Office of Graduate and International Admissions, and Sponsored Student Programs was reorganized to include Graduate Recruitment. The new office title became Office of Graduate and International Recruitment and Admissions, with Lynn Mosesso as Director.

1. Jennifer Ezell (hired in June, 2006) began in August 2006 to replace Jessica Presley.
2. Pritam Chowdhury was hired in August 2006 to replace David Edwards.
3. Elizabeth Mitchell hired in August 2007 to replace Ty Keller, Graduate Recruitment.
4. Lindsey Conaway was hired in February 2007 to replace Pritam Chowdhury.
5. Mike Miller was hired in May 2007 to replace Donna Coleman.
6. Erica Yueng was hired in April 2007 as an hourly assistant for the Sponsored Student Programs unit.
7. Keri Walton was hired in June 2007 as an hourly assistant for Operations Management application processing.
8. Jeremy Turner was promoted to Administrative Assistant I in June 2007.
9. Cassandra Shaffer was hired in June 2007 to replace Jeremy Turner.
10. Jerrick Hornbeak resigned as Graduate Recruitment assistant June 29th.

### Information and Training Initiatives

Assistant Director of Graduate Admissions provided ISIS and graduate admissions procedures training to Operations Management site coordinators from four sites in November, 2006.

Six staff members attended the NAFSA: Association of International Educators Region III Conference in Little Rock, AR, in November, 2006. (Despite appearances, "NAFSA" is no longer an acronym.)

In February 2007, the Assistant Directors of Admission attended the Southern Association of College Registrars and Admissions Officers (SACRAO) conference in Little Rock.

In April 2007, the Director and Graduate Recruiter attended the National Association of Graduate Admissions Professionals (NAGAP) conference in Orlando, FL. The Graduate Recruiter presented a session on the George Washington Carver Research Program as a recruitment tool.

All admissions staff attended a diversity workshop entitled "In Their Shoes" (a training session highlighting the unique issues of international students on campus).

The office staff provided on-going international and domestic admissions training to the Graduate School of Business.

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.



Jennifer Ezell was given supervision and training of all hourly and work study students on office procedures and tracking progress via spreadsheet.

Assistant Director of International Admissions presented a training session for College of Agriculture, Food, and Life Sciences Academic Advising Committee in September 2006.

In February 2007, Lynn Mosesso and Susan Byram met with Dr. Wicks, new Graduate Coordinator in Journalism, for training in international processing procedures.

In March 2007, recruitment and admissions staff attended an all-day seminar on Effective Graduate Recruiting.

In April 2007, international admissions staff presented training for Arkansas 2-year school advisors at transfer orientation.

In May 2007, the Director and Assistant Directors attended the “Managing Employee Performance” training session offered by Human Resources as part of supervisor training.

In May and June 2007, the Assistant Director of International Admissions attended training meetings for implementation of the SEVIS/PASS (ISIS/SEVIS Interface).

Sponsored Student Programs hosted two graduation dinners ~ one in December 2006 and one in April, 2007 for sponsored students graduating fall 2006 and spring 2007.

### Revenue

The Director evaluated 63 international applications (up from 48 in FY 2005) for the Graduate School of Business, generating \$1,575.

Credential evaluation fees of \$500 were collected for evaluation services the Director provided to campus employees seeking foreign degree equivalencies.

The Sponsored Student Programs service fee generated approximately \$46,192 for fiscal year 2006.

### Web Page Updates/Additions

- Graduate Application for Admission updated.
- On-line inquiry card went live the end of June 2007. We have not had an on-line inquiry card since spring 2005.
- Scholarship links were added to the International Admissions homepage.
- International FAQs were updated.
- Student Cultural Associations were updated.
- 2007-2008 Academic Costs for International Students was updated.

### Domestic Recruitment Activities

Collectively, recruiters Diane Cook, Karla Clark, and Jerrick Hornbeak returned a total of 869 prospects from various recruiting trips during fall 2006. The Office of Graduate Recruitment attended 23 institutions and/or fairs from September through November. The average of cards returned per trip is 37.78. Overall student attendance for all 23 recruiting trips was 4,616. Of those students 3,649 were students of color.

Collectively, recruiter Karla Clark and Graduate Assistant Jerrick Hornbeak returned a total of 244 prospect cards from various recruiting trips spring 2007. The Office of Graduate Recruitment visited 10 institutions and/or fairs from February through April. The average of cards returned per trip is 24.4. Overall student attendance for all 10 recruiting trips was 805. Of those students, 605 were students of color.

The recruitment staff visited a total of 23 universities and attended the following conferences:  
Heartland McNair Conference, Kansas City, MO

DSX Fair, New Orleans, LA

McNair Conference, Denton, TX

MANNRS (Minorities in Agriculture, Natural Resources, and Related Sciences) Conference, Birmingham, AL

SACNAS (Society for Advancement of Chicanos and Native Americans), Tampa, FL

National Society of Black Engineers, Philadelphia, PA

Atlanta Consortium, Atlanta, GA

Houston AMP (Alliance for Minority Participation) Conference, Houston, TX

Texas AMP Conference (for Texas schools), El Paso, TX

National Association of Black Geologists and Geophysicists

AGEM Conference (Alliance for Graduate Education in Mississippi), Oxford, MS

The recruitment office provided cost share for faculty/staff to attend the following conferences:

Southern Anthropological Society (SAS), Oxford, MS

National Association of Black Geologists and Geophysicists

Geological Society of America

SACNAS

MANNRS

The office hosted 32 separate campus visits for prospective students.

The office hosted a campus visit for Tennessee State University. Two prospective students and Ms. June Adams, Asst. Director of the Office of Graduate and Professional Opportunities, were extremely impressed with the campus and our hospitality.

The office worked with International Admissions to host nine prospective students from Midwestern State University.

## International Recruitment Activities

Indian Women Fellowship Program (IWFP) - established by the UA Graduate School in Fall 2006 to assist academic departments with increasing the presence of graduate level women scholars from India. The IWFP provides resident tuition for selected applicants. Seven students were selected for Fall 2006.

The Fulbright Tsunami Relief Initiative was created by former U.S. Presidents George Bush and Bill Clinton to assist with rebuilding efforts in the Aceh Banda province of Indonesia. The first cohort group began Fall 2006 at the University of Arkansas and Texas A&M University. The University of Arkansas hosted nine scholars, with the Clinton School hosting one. A welcome reception was held at the University House in September. In May, the University of Arkansas hosted a retreat at the Winthrop Rockefeller center at Mt. Petit Jean. A total of 34 students from UA, Texas A&M, SUNY Buffalo, University of Pittsburg, University of Delaware and Indiana University worked on community development issues.

Two undergraduate students and seven graduate Bolashak Presidential Scholars joined the University in Fall 2006. This is the first semester students funded through this program have enrolled at the university.

The office co-sponsored an on-campus visit for foreign student advisors from Tulsa Community College and Northwest Arkansas Community College. Advisors participated in the April 2007 New Student Orientation for Transfer Students.

The university participated in the Institute of International Educations College Fairs in Hochiminh City, Vietnam. Dr. Tran Thi Hong, Vice-Director, Graduate Studies Department, Vietnam National University – Hochiminh City University of Technology, once again represented the University of Arkansas in Vietnam.

The office participated in the Eduventures Jamaica college fair in Kingston and Montego Bay. UA representatives talked with over 500 prospects and received 12 applications.

The office participated in the EducationUSA college fair in Trinidad. UA representatives talked with 280 prospects and received four applications for admission.

The office funded Nick Cogan, UA foreign student advisor, to participate in a college fair in Shanghai, China. Mr. Cogan is fluent in Mandarin and met with students and alumni in Shanghai and Beijing. Three applications have been received from his visit.

The office contracted with Hobson International Guides to advertise in the European, Latin, Asian, and World editions for 2006 and the TOEFL/ETS/Hobson guide. The cost was shared with Spring International Language Center.

The office contracted with Study USA to advertise in their world wide edition and web. The cost was shared with Spring International.

The Graduate School funded two faculty (Dr. Doug Rhoads, CEMB, and Dr. Lalit Verma, BENG) to visit Chennai, India. Faculty met with prospective students and parents and visited two Indian universities: Indian Institute of Technology and the University of Madras.

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

No students enrolled as a result of our agreement with the President's Network. The Office of Admissions has discontinued the agreement.

The MOU with National Collegiate Network, signed effective Fall 2005, saw 16 degree seeking undergraduate students from Japan enroll Spring 2006. Spring 2007 numbers increased to 54.

The Caribbean Tuition Advantage, signed effective Fall 2005, saw three degree seeking undergraduates enroll Fall 2005 and 12 enroll Fall 2006.

Two Chancellor's Scholarships and one \$5000 Silas Hunt Award were given to international new freshmen students for 2007-2008.

The Director met with representatives from the following:

- Dr. Tran Thi Hong, Vice Director, Graduate Students, Vietnam National University. Dr. Tran's recruitment of students has resulted in 16 graduate and 21 undergraduate students currently enrolled at the UA.
- Monica Suber, Program Officer, Winrock International, Washington DC, visited campus to meet with Winrock sponsored students, advising faculty, and UA administrators in October.
- Srini Krishnan (Chennai, India), "Artist in Residence" at Miami University, met with representatives from all the UA Colleges, Graduate School, various academic departments to discuss the recruitment and placement of Indian students to graduate programs. They also discussed the success of the Indian Women Fellowship.

### Unit Goals

- Continue to work with the ISIS Graduate Specialist to make sure data needs are met.
- Create and maintain an ISIS admissions procedure manual that is kept up-to-date and can be used for training purposes.
- Continue to work with International Student Support Office and the Registrar's Office to ensure a sound integration of ISIS and federal Student and Exchange Visitor Information System (SEVIS). This task was not completed by the end of the spring 2006 semester, the initial goal.
- Implement a domestic and international application data entry template
- Work toward the automation of letters to applicants and students.
- Implement scanning of enrolled student documents.
- Increase the number of sponsored students enrolled at the UA.
- 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 outreach to Hispanic Serving Institutions and Historically Black Colleges and Universities.
- Build a strong recruitment team.
- Create new and revise old printed recruitment materials.
- Revise the current communication plan.

## **George Washington Carver Project**

### *Overview*

Implemented in 1997, the George Washington Carver Project (GWCP) 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. In 2007, the Carver Project experienced a name change and became the George Washington Carver Research Program (GWCRP). We also removed Tribal Colleges from our mission statement. The goal of the Carver Program remains the same, to enhance the diversity of the graduate student body by encouraging students at participating HBCUs and HSIs to participate in summer research and then pursue graduate and professional degrees at the University of Arkansas Graduate School.

This year's participating institutions are Alcorn State University (2 students), Bennett College (1 student), Huston-Tillotson University (1 student), Langston University (5 students), Philander Smith College (1 student), Norfolk State University (2 students), University of Arkansas at Pine Bluff (5 students), and Wiley College (3 students). Four additional minority students from non-Carver institutions participated through an REU program.

While on campus, each intern worked directly with a faculty mentor on a structured research project (please see appendix A at the end of this section).

### *Application and Selection Process*

In the fall of 2006, an initial call for applications was sent to faculty and administrators at each of the partner institutions. Application packets were sent to every student with at least a 2.9 GPA at a participating institution that had been met by a recruiter. The minority graduate recruiter visited 18 of the participating institutions. All positions were advertised for Carver by meeting with students and key administrators on each campus to provide eligible students with information about the George Washington Carver Research Program.

In February of 2006, another call for applications was conducted by phoning all the faculty and administrators who had received the information in the initial call. Extensive follow-up with these contacts was conducted until the end of April to fill the internships. Email reminders were sent to all the students from the initial call. Additionally, contacts were made with students, faculty and administrators at the 2007 National Society of Black Engineers Conference held in

Ohio. Even with enforcing the same recruitment initiatives, the number of applications was not affected.

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. The Director & Associate Director of Recruiting in the College of Engineering analyzed the engineering applications before sending them to the appropriate administrator. 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. Ultimately, 20 students were selected to participate in the 2007 George Washington Carver Research Program.

### *Implementation*

The selected students arrived on May 20, 2007. As a part of the continued collaboration, the opening week activities were again held with other university sponsored REU programs. These programs included Food Science, Microelectronics-Photonics, Physics, Chemistry, INBRE and the newly created Mechanical Engineering REU. Each program agreed to co-host the opening week activities May 20-22. The welcome dinner for the Carver/REU students was held at University House. Additional combined activities included orientation, a welcome luncheon, and a team-building day.

In addition to formal research training, the Carver interns participated in several co-curricular activities including a trip to the George Washington Carver National Monument, several restaurant outings, bowling, the new Promenade retail center, a barbeque sponsored by Dr. Wilyerd Collier, and a trip to the Lokomotion Fun Park.

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.

“Applying to Graduate School,” presented by Ms. Karla Clark, Graduate Recruiter & Director of George Washington Carver Project.

“Presentation Skills,” presented by Dr. Robert Brady, Department Chair of Communications.

“Ethics in Research,” presented by Dr. Dennis Brewer, Associate Vice Provost for Research.

The Dinner & Dialogue Series also included a Panel of REU alumni to address the students' many questions about the summer, and allow the students a glimpse into the alumni's experiences.

Interns presented their research findings at the closing program on Wednesday, July 11, 2007. This is the first year that we are not doing power point presentations, but instead each student prepared a poster presentation.

### *Recommendations for Future Improvement*

- Begin confirming departmental participation in the Carver Program in early August to allow the Graduate Recruiter to recruit students during graduate school fairs at the Carver institutions.
- In order to create complete involvement by all REU/Summer Programs, begin scheduling meetings in December. All meetings for the entire project should be decided before Christmas break. This year there was more involvement from the REU programs, but that participation needs to grow.
- Consider a dedicated employee to help the Director with the Carver Program no matter the status of the staff in the Office of Graduate Recruitment.
- Consider pursuing grant opportunities to fund more internship opportunities in disciplines that are not currently offered.
- Continue research meetings once a week. This time is to connect with the students and make sure they are on track with their performance. A checklist should be used at each meeting to mark their progress. The MicroEP program should be used as an example.
- Directors of each REU program must participate more in the collaborative activities. Even after signing the MOU's many directors still did not attend activities, thus leaving the Director of the GWCRP to facilitate these activities alone.
- Consider specific travel to recruit specifically for the GWCRP and the REUs. These trips should include the graduate recruiter and a director. The schools traveled to and the REU should be matched with programs at the participating Carver Institutions.
- Consider only writing letters of support for those grants that will write in monetary or administrative support for the collaborative efforts. We continue to add programs to our collaborative efforts, but we are not adding staff to facilitate this growth. Most of the responsibilities then fall on the Director of the GWCRP.

### *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, Chemistry, and Microelectronics-Photonics 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. The departments with established REU programs were responsible for the expenses associated with their students. The other departments transferred \$5,500 per intern to a Carver account established in the Graduate School. The Graduate School gave the Carver Project an operating budget of \$12,000 to supplement the departmental contributions and cover the costs not directly related to the individual internships, including the expenses associated with the opening and closing program, social activities, and field trips.

*Appendix A : List of Carver/REU Participants with Discipline, Mentor, and Home Institution*

|                                |                      |                                      |
|--------------------------------|----------------------|--------------------------------------|
| Agriculture Economics          | Dr. Dan Rainey       |                                      |
| Ms. Monique Fahie              |                      | Alcorn State University              |
| Biology                        | Dr. David McNabb     |                                      |
| Ms. Tomica Blocker             |                      | Langston University                  |
| Biology                        | Dr. Ines Pinto       |                                      |
| Mr. Edgar Siyakurima           |                      | Wiley College                        |
| Biomedical Engineering         | Dr. Kaiming Ye       |                                      |
| Ms. Felicia Ekpo               |                      | Langston University                  |
| Chemical Engineering           | Dr. Ed Claussen      |                                      |
| Mr. Jason Chandler             |                      | Langston University                  |
| Drama                          | Dr. Andrew Gibbs     |                                      |
| Mr. Randall Wilkerson          |                      | University of Arkansas at Pine Bluff |
| Education                      | Dr. Charlene Johnson |                                      |
| Ms. Felysia Chatman            |                      | Huston-Tillotson University          |
|                                | Dr. Mike Miller      |                                      |
| Ms. Ashley Goolsby             |                      | Bennett College                      |
| English                        | Dr. Bob Cochran      |                                      |
| Mr. Muhammed Shukri Abdul Aziz |                      | Wiley College                        |
|                                | Dr. Susan Marren     |                                      |
| Ms. Celina Robinson            |                      | Wiley College                        |
| Horticulture                   | Dr. Curt Rom         |                                      |
| Ms. Lakeitha Ruffin            |                      | Alcorn State University              |
| Biological Sciences INBRE REU  | Dr. David Paul       |                                      |
| Ms. Nakita Lovelady            |                      | University of Arkansas at Pine Bluff |
| Ms. Cassandra Hunter           |                      | University of Arkansas at Pine Bluff |
| Ms. Sharon Sanders             |                      | Philander Smith                      |
| Chemistry REU                  | Dr. David Paul       |                                      |
| Mr. Charles Loftis             |                      | Langston University                  |



Ms. Karole Blythe

Langston University

Masterfoods REU

Dr. Navam Hettiarachchy

Ms. Cuwonna Peoples

University of Arkansas at Pine Bluff

Ms. Francine Henderson

Alabama A&M University

Ms. Maxine Roman

University of Illinois in Urbana-Champaign

Ms. Shannon Coleman

Alabama A&M University

Mr. Anthony Sims

Alabama A&M University

Microelectronics-Photonics REU

Prof. Ken Vickers

Mr. Tariq Bond

Norfolk State University

Mr. Benjamin Newton

University of Arkansas at Pine Bluff

Ms. Tiara Dunigan

Norfolk State University

### **Office of Program Review and Assessment**

During academic year 2006-07, the Office of Program Review and Assessment continued to develop additional responsibilities, and to revise existing policies and procedures. Academic Policies 1620.10 and 1620.20, which deal with program review, were revised and a new MOU document, Strategies for Progress/Maintenance, was approved for use. Four department reviews from the 2005-06 academic year have completed the program review process and have an approved Strategies document. The other nine Strategies documents are in various stages of review or revision and are to be completed during the Fall 2007 semester.

Seven department/program reviews, listed in Table 1, were conducted during the 2006-07 academic year. Four departments have received their final program reviews and are working on their Strategies documents. Three other department/program reviews are in various stages of completion and should be returned to those departments before August 15, 2007. All seven departments/programs will develop a Strategies document which will be submitted to the Director of Program Review and Assessment on or before December 15, 2007.

The Director of Program Review and Assessment cooperated with the campus-wide effort to supply data and documents for the Higher Learning Commission of the North Central Association of College and Universities. Assistance was provided in the form of data collection, program review documents, and participation in the Higher Learning Commission team site visit.

An administrative review of Academic Policy 1630.10, Student Academic Achievement and Degree Program Outcomes, was conducted and the reporting procedure was revised with the report being routed from each College to the Director of Program Review and Assessment. The initial reports were composed in a format which was consistent with the needs of the Higher Learning Commission review. The reporting format and elements are to be reviewed and revised during the 2007-08 academic year following the review report being received from the Higher Learning Commission.

Activities for the 2007-08 academic year include the following:

- Completion of the 2005-06 and 2006-07 review Strategies documents by December 15, 2007.
- Review five additional Departments/Programs as part of the 2007-08 program review process.
- Continue to adjust report formats and procedures for not only program reviews but the student assessment report.

Other activities that will be performed by the Director of Program Review and Assessment are:

- Continue to serve as the secretary for the University Course and Programs Committee which meets once per month.
- Continue to serve as Co-Chair of the U of A task force, the “U of A Experience.” The task force meets biweekly during the regular academic sessions.

Extra Activities/Honors:

The Director of Program Review and Assessment, Dr. William Warnock, was inducted into the University of Arkansas, Biological Engineering Academy during the spring 2007 semester.

*Table 1 Departments/Programs reviewed during the 2006-07 academic year were:*

| Department/Program         | College  | Degrees             |
|----------------------------|--|---------------------|
| Biological Engineering     | Agriculture/Engineering                        | MSBE, MSBME, PHD    |
| Chemistry and Biochemistry | Arts and Sciences                              | BA, BS, MS, PHD     |
| Mathematical Sciences      | Arts and Sciences                              | BA, BS, MA, MS, PHD |
| Mechanical Engineering     | Engineering                                    | MSME, PHD           |
| Microelectronics-Photonics | Graduate School<br>(Interdisciplinary Program) | MS, PHD             |
| Physics                    | Arts and Sciences                              | BA, BS, MS, MA, PHD |
| Public Administration      | Arts and Sciences                              | BSPA, MPA           |

### **Public Policy Ph.D. Program**

#### *Executive Summary*

The 2006-2007 academic year was characterized by the customary programs and practices such as classes/seminars, dissertation defenses, qualifying exams, brown bag sessions and the like. The past year was also a period during which many changes occurred. The Director and founder of the program, Professor Will Miller, resigned to accept a position at another university. The Associate Director of the program, Professor Gary Ritter, resigned from his position in the

program. These faculty members created, sustained, and left to their successors a very successful program. 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 they presented many papers at national and international conferences. Students exiting the program continue to be placed in excellent positions.

During the transition period, the Graduate School increased substantially its commitment to the program. The incoming Director of the program, Professor Brinck Kerr, was appointed in May 2007 to a full-time position with reduced teaching responsibilities. This will allow the Director to devote sustained and high levels of attention to the program. The Graduate School appointed Professor Valerie Hunt as Associate Director of the program. A significant portion of Professor Hunt’s appointment, which includes teaching and administrative duties, is devoted to the policy program. The program faculty and the new administrators are in the process of reviewing the following components of the program: curriculum, advising, qualifying exams, residency policies, and the website.

*Student Enrollment and Achievements*

The program enrolls between 60 and 70 students. Enrollment continues to be diverse (see Table 1 below). The program receives many applications, the majority of which are turned down due to qualifications of the students, administrative capacity, and lack of fit. During the 2006-2007 academic year, the program received 62 applications for admission and offered admission to 21 students. Of these 21 students, 11 enrolled at the university.

Table 1. Breakdown of Active Students by Sex and Race/Ethnicity, 2006-2007

|                           | Female | Male | Total |
|---------------------------|--------|------|-------|
| African American          | 9      | 2    | 11    |
| Asian American            | 0      | 0    | 0     |
| Latina/Latino             | 0      | 2    | 2     |
| Native American           | 2      | 0    | 2     |
| International             | 6      | 8    | 14    |
| White (non-Latina/Latino) | 22     | 11   | 33    |
| Total                     | 39     | 23   | 62    |

**Altaf A. Abro** co-authored a paper with Professor Ralph K. Davis on “Institutional Response to Water Scarcity in Pakistan” for the USCID conference in Boise, Idaho in October 2006, where he was awarded a 2006 USCID/Summers Engineering Scholarship. He is currently working on his dissertation which focuses on water policy issues and the water policy formation process in Pakistan.

**Adam Arroya** has accepted a position with Wal-Mart Stores as Director of Communities and Opportunities, Corporate Affairs Department.

**Matthew Carr** published “Charter Schools and Racial Segregation: An Examination of Two States” with Nathan Gray, University of Arkansas Public Policy Working Paper Series, Spring 2007. Matthew and Professor Gary Ritter coauthored “Measuring the Competitive Effect of Charter Schools on Student Achievement in Ohio's Traditional Public Schools,” Paper presented at the 2007 annual meeting of the American Educational Finance Association, Baltimore, MD. Matthew also presented testimony before the Kansas Joint Committee on Children’s Issues on "Vouchers for Special Needs Students in Kansas," Topeka, KS, February, 2007.

**Laura Connerly** made three conference presentations in the academic year: Galaxy Conference, University of Arkansas Division of Agriculture Cooperative Extension Service; National Endowment for Financial Education (national training meeting for professionals who teach financial literacy); and 21<sup>st</sup> Century Families Conference (national conference for Family and Consumer Science professionals).

**Dorothy Effa** presented “Combating Desertification in Ghana - A Policy Framework” at the meeting of the Association for International Agricultural Extension and Education, Polson, Montana, May, 2007.

**Marc Holley** presented a paper on a random assignment study design at the American Education Finance Association Conference and a state finance report update at the American Education Research Association Conference.

**Otilia Incur** has been named Editorial Assistant for *The American Review of Politics*, a quarterly political science journal.

**David Jerome** was elected to the Newton County Missouri Health Board. This is a seven member board; each member is elected to a four year term by the citizens of the county.

**Cammie Marti** gave a presentation at the 134th Annual American Public Health Association Meeting and Exposition, November 2006. Cammie was also hired by U. S. Department of Homeland Security to oversee the national policy development of the Public Health portion of Homeland Security Presidential Directive 8. She wrote the Arkansas Pandemic Influenza Grant for Arkansas Department of Health (grant awarded; \$1.2 million) and is overseeing the re-write of the State of Arkansas Health Disaster Response Plan.

**Stacey W. McCullough** gave a presentation on “Ballot Issues Education” at the National Public Policy Education Conference, Fayetteville, AR, September, 2006. She gave another presentation, “Rebuilding a Community and Economic Development Program,” at the National Association of Community Development Extension Professionals Conference, Philadelphia, Pennsylvania, April, 2007. Stacey is an Instructor in Community & Economic Development, Public Policy Center, University of Arkansas Division of Agriculture Cooperative Extension Service.

**Martha Pickett** made two invited presentations on technology and distance education at international conferences, one in Athens and one in Manchester, England. Martha has been named associate editor of the professional journal, *Nuclear Medicine Technology*.

**Mary Ramey** made two paper presentations at conferences: “Fractionalized Presence: A Topology of Communication by Technological Talkers,” Annual Meeting of the American Educational Research Association, Chicago, IL, April 2007; and “The Americans with Disabilities Act: A History of Rights,” Annual Meeting of the Society for the Philosophy and History of Education, San Antonio, TX, September 2006.

**Caleb Rose**, an Education Policy student, was elected as the Associated Student Government (ASG) representative to the Graduate Dean’s Student Advisory Board (GDSAB) for the 2006-2007 Academic Year. In addition to his service on the GDSAB, he was also awarded the 2006-2007 ASG Senator of the Year Award for his outstanding representation of the Graduate/Law schools.

**Chris Shields** is Co-PI on a two-year grant, Prosecution and Defense in Terrorism Trials, National Institute of Justice (grant award \$292,893; other Co-PIs are Professors Brent Smith and Kelly Damphousse). He also continues his work as a research associate and data manager on another grant, The American Terrorism Study: Creation and Utilization of a National Database of American Terrorism, National Memorial Institute for the Prevention of Terrorism, U. S. Department of Homeland Security (grant award \$929,972; PI, Brent Smith). Chris presented “Their Day in Court” at a University of Arkansas, Research in Progress brownbag session, November, 2006. Chris was also awarded a prize by the U of A Public Policy Program for paper most likely to influence public policy.

**Liliana Sireteanu** presented "Public Sociology and Intersectionality: A Case Study of Women as Victims of Human Trafficking," at the Mid-South Sociological Association (MSSA) conference, Lafayette, Louisiana, October, 2006. (coauthored with Professor Anna Zajicek.).

#### *Placement and Other Achievements of Our Graduates*

**Joshua Barnett** successfully defended his dissertation this year. Joshua received a Rotary Ambassadorial Research Scholarship, and took a Visiting Research Associate and Lecturer position at Massey University in Palmerston North, New Zealand.

**Holly Felix**, who graduated from the program in December 2005, was appointed Assistant Professor of Health Policy and Management at UAMS College of Public Health and an Associate in the COPH Center for the Study of Obesity in September 2006. Her time is dedicated to public health research efforts, which currently focus on evaluation of Medicaid programs, long-term care and obesity related issues. She has several grant applications pending. Over the last year, Dr. Felix has published four manuscripts in peer-review journals and submitted six others (three of which are in press), and made six presentations at national scientific meetings.

**Valerie Hunt**, who graduated from the program in 2004, was recently appointed Associate Director of the Policy Ph.D. program and Research Assistant Professor in Public Policy. For the past two years, she has been teaching several undergraduate courses and a graduate course in the Department of Sociology and Criminal Justice. She has also taught a graduate course for the Public Policy program. In October of 2006, Dr. Hunt presented “Meeting the Needs of Disadvantaged Populations: An Organizational Case Study of CDCs in Arkansas Delta ” at the

Mid-South Sociological Association (MSSA) conference, Lafayette, Louisiana. Portions of Dr. Hunt's dissertation research will appear in "Community Development Corporations and Public Participation: Lessons from a Case Study in the Arkansas Delta" in *Journal of Sociology & Social Welfare*, September 2007, Volume XXXIV, Number 3. Dr. Hunt has also undertaken several interdisciplinary collaborations including a manuscript currently under review with the *Sociological Spectrum*, a grant proposal to the Robert Wood Johnson Foundation, and a book manuscript proposal to the National Association of Social Work Press.

**Patti Martin** gave two presentations at national conferences and submitted a manuscript to a peer-reviewed journal. In 2006 she published "Infant Hearing Guide," Distributed through the National Center for Hearing Assessment and Management (<http://www.infanthearing.org>) (with Vanbiervliet, A., Boone, S., and Nicholson, N). Patti is also involved in research on three grant projects, two funded by the National Center for Hearing Assessment and Management, and the other funded by Cochlear Americas.

**Michelle Smith** served as conference chair of Jefferson Comprehensive Care System, Incorporated's Third Regional HIV/AIDS Conference, Little Rock, AR. Guest speakers included Dr. Joycelyn Elders, David Harvey, Executive Director of AIDS Alliance, and Phill Wilson, Executive Director of the Black AIDS Institute.

### *Sustainability*

Policy faculty in Agriculture and Political Science are nearing completion of a project on county level measures of sustainability. Using two graduate assistantships (one supported by an Agricultural Extension Service grant to the policy program), the research team conducted a survey, gathered large data sets and has developed reports.

### *Changes*

#### The Future of the Program

Recent efforts by the Graduate School to increase administrative support for the policy program will help it take steps toward the goals of achieving greater prominence and recognition. In order to achieve these goals, it is critical that the faculty line in the Political Science Department (formerly held by Will Miller) be filled by someone who can teach the program core course in public policy analysis (PLSC 5163) as well as one or two other graduate level courses that will be of interest to our policy students.

#### Curriculum Revision

During the past year, under the previous director's supervision, faculty have been reviewing the curriculum for the policy program. To help inform the review, the program participated in a national conference on curriculum for public policy programs. Several faculty members have indicated that they are in favor of adding a three-hour quantitative methods course to the program methods requirements. The addition of this requirement would broaden the knowledge and skills of students in our program. The new program administrators will continue to consult

with program faculty to determine whether or not there is widespread support for this curriculum change.

Policy faculty approved the addition of a special topics course (PUBP 604V) to the catalog. If the subsequent approvals are obtained in a timely fashion, this course could be added to the 2008-09 catalog.

### Other Changes

*Lake Wedington* – The policy program has managed the Lake Wedington Recreation Area for the past six years. The program has completed and terminated its commitments on this project. Management of the recreation area has been returned to the U. S. Forest Service.

*Clinton School* – The policy program had a very important role in the development of the Clinton School of Public Service. A few recent graduates of the Clinton School have inquired about admission to the policy program. These inquiries have resulted in a few informal, preliminary discussions about developing a track (i.e. admissions relationship/understanding) between the Clinton School and the policy program. The program administrators will continue to explore this possibility.

*The Strategic Environment* – Last year some contacts at University of Arkansas at Little Rock (UALR) were planning a new “policy research” Ph.D. program. There is no evidence that these efforts are progressing. The University of Central Arkansas (UCA) has requested approval from ADHE to establish a Ph.D. program in Leadership Studies. A review of their proposal indicates that there is very little overlap between UCA’s proposed program and ours. Their program is based on a psychology perspective and has very little public policy, public service, or public administration content in the curriculum. There is a possibility that certain amendments to the proposal – those that widen/shift the focus of UCA’s program to include more of a policy component – could increase the potential for overlap. The program administrators will monitor the possibility of changes in the UCA program.

*Graduate Assistantships* – The Graduate School has changed our graduate assistantships to twelve month positions. This has been very helpful for recruiting and student support. It would be beneficial to develop a few more assistantship positions as the program would benefit from a higher ratio of full-time students on assistantship to part-time working students.

*Specializations* – The program is continuing to consider a new specialization in gerontology policy. We are also reviewing existing specializations 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 us to respond to changing needs. Health policy is still an area of great demand, but we continue to lack the faculty resources to meet that demand.

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

*Student Publications, 2006-2007 (policy students in bold)*

**Carr, Matthew**, White Paper: Public School Finance in Indiana. *Indiana Policy Review*, January 27, 2007.

Damphousse, Kelly and **Christopher Shields**. 2007. The Morning After: Assessing the Effect of Major Terrorism Events on Prosecution Strategies and Outcomes. *Journal of Contemporary Criminal Justice* 23(2):174-194.

Owen, M.A., **Pickett, M.W.**, Christian, P.E., Dillehay, G.L., Fulk, L.A., Gordon, L.L., Henkin, R.E., Smith, M., Hubble, W.L., Thompson, K., Keech, F.K., Nielsen, Stachowiak, A. 2007. Nuclear Medicine Practitioner Competencies. *J Nucl Med Technol* 35(1):39-41.

**Pickett, M.W.**, Keech, F.K., Owen, M.A., Stachowiak, A., Fulk, L.A., Murphy, K.H., Christian, P.E., Hunter, K., Hubble, W.L., Gordon, L.L., Dillehay, G.L., Henkin, R.E.. 2006. Position Paper on the Development of a Middle Level Provider in Nuclear Medicine: The Nuclear Medicine Practitioner. *J Nucl Med Technol*. 34(4):236-243.

**Pickett, M.W.** 2007. Advanced Practice in Nuclear Medicine: A Pathway to Clinical Leadership (Invited Perspective). *J Nucl Med Technol* 35(2):13-14A.

**Ramey, M.A.** 2007, in press. The Americans with Disabilities Act: A History of Rights. *Society for the Philosophy and History of Education*.

**Shields, Christopher**, Kelly Damphousse, and Brent Smith. 2006. Their Day in Court: Assessing Guilty Plea Rates Among Terrorists. *Journal of Contemporary Criminal Justice* 22: 261-276.

**Shields, Christopher**, Kelly Damphousse, Paxton Roberts, Tad Sours, and Brent Smith. 2007, forthcoming. The Unabomber: Theodore John Kaczynski. In Steven Chermak and Frankie Bailey (eds.), *Famous Crimes and Trials*. Westport, CT: Praeger Publishing. (order of names pending).

Zajicek, A, T. Calasanti, C. Ginther, and **J. A. Summers**. 2006. "Intersectionality and Age Relations: Unpaid Care Work and Chicanas," In Toni M. Calasanti and Kathleen Slevin (eds.), *Age Matters: Re-Aligning Feminist Thinking*. New York: Routledge.

### **Microelectronics-Photonics Graduate Program**

1. Progress and accomplishments related to strategic plans and university priorities and goals:
  - a. The microEP Graduate Program completed its "tenth year review" with the following recommendations by the external reviewers:
    1. Budget increases to support 5-10 TA positions, travel, and events.



2. Continued budget support of Director and Program Specialist's salary, and create new budget to support an Assistant Director.
  3. Improved faculty participation in active governance, and distribute management of some program elements to the core faculty members.
  4. Improved communication between Director and partner departments' faculty.
- b. An examination of all entering students into the microEP graduate program through the fall 2007 entering Cohort 10 class shows a total of 147 students have entered the program since its inception in 1998. Sixty-one of these students are expected to be actively enrolled for fall 2007, nine are passive (not enrolled and lacking only thesis or final project report), three have left the educational system without a graduate degree, seven have transferred to another graduate degree program before finishing a microEP degree, and sixty have completed one or more microEP graduate degrees and have left the University of Arkansas.
  - c. Of the 137 students that have not prematurely exited the program, twenty-nine are female (21 percent of the student population).
  - d. Of the 137 students that have not prematurely exited the program, twenty-four are African-American or Hispanic (18 percent of the student population).
  - e. Of the twenty-four minority students, six have expressed interest in continuing to 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 minority students are female.
  - f. Fifty-eight students have completed their MS microEP degrees through August 2007 graduation. Twenty-two PhD students have graduated through August 2006, including three male African-American graduates, one female Caucasian graduate, and one female Asian graduate.
  - g. 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 2007 program has eleven students. This includes two African-American male students, two African-American female students, and seven white male students.
  - h. The microEP program continued support of the following laboratory classes in the HiDEC processing facility through MEPH TELE fees expenditures of \$7,500 for materials and equipment:
    1. ELEG 5293L Integrated Circuit Fabrication Laboratory
    2. ELEG 5243 Microfabrication
    3. ELEG 4223 Solar Cell Design and Fabrication

This use of MEPH TELE fees to support classes being taught in HiDEC continued the microEP Grad Program partnership with HiDEC, resulting in the policy continuing that allowed summer 2007 microEP REU participants to work in HiDEC without further additional charges to their mentoring professors or the REU site budget.

- i. The microEP Industrial Advisory Committee met for the fifth time in April 2007 with no significant issues identified, although the PhD candidacy process received an elevated level of discussion.

2. New Initiatives to support teaching and research

- a. A new undergraduate minor in Microelectronics-Photonics was approved for implementation 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.
- b. The new class in nanoscale device processing under Dr. Greg Salamo (Physics) was supported by \$8,400 of MEPH TELE fees used for materials and photomasks in the embedded laboratory component. The class was taught as MEPH 587(3) in the spring 2007 semester, and will be proposed for regular class status in the 2007-2008 academic year.
- c. An additional \$4000 of MEPH TELE fees was used to support two years of increased subscription levels to the Knovel on-line library of technical publications through the University Library.
- d. The microEP core curriculum was modified to reflect the increased emphasis in biological, chemical, and optical sensing from recent College of Engineering faculty hires. The modified curriculum was submitted and fully approved for implementation in the 2007-2008 Graduate School Catalog.
- e. The Graduate School has continued to supply the microEP Graduate Program with two TA positions in the AY 07-08 to use in its recruiting. These TA positions will be assigned to support departments that have supported the microEP program through the use of microEP students in their own departmental budget TA positions.
- f. A second maintenance budget was given to microEP based on fall 2005 enrollment figures (\$250/enrolled student, or \$15,000).

3. Benchmarking evidence

The process has started on an alumni survey in the spring 2007 semester to gather information on program effectiveness on campus and in its training methods as viewed by its graduates in their early careers.

4. 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 \$2,200k Central concept

2000

NSF MRSEC: Salamo \$2,245k Education component

Dept of Ed FIPSE: Salamo, Vickers, Turner \$ 280k Central concept

NSF PFI: Loewer, Salamo, Vickers \$ 360k Management component

2001

|                        |                         |          |                        |
|------------------------|-------------------------|----------|------------------------|
| NSF REU (3 year):      | Brown, Salamo           | \$ 353k  | Central concept        |
| NSF IGERT RET:         | Schaper, Salamo         | \$ 10k   | Central concept        |
| NSF MRSEC RET:         | Salamo                  | \$ 20k   | Education component    |
| DoEd FIPSE Supplement: | Salamo, Vickers, Turner | \$ 25k   | Central concept        |
| <u>2002</u>            |                         |          |                        |
| NSF GK-12:             | Salamo, Vickers, Hobson | \$2,700k | Central concept        |
| NSF REU RET:           | Brown, Salamo, Vickers  | \$ 20k   | Central concept        |
| <u>2003</u>            |                         |          |                        |
| NSF REU (5 year):      | Brown, Salamo, Vickers  | \$ 625k  | Central concept        |
| NSF Eng U/G Reform:    | Vickers, Foster, Carter | \$ 100k  | Central concept        |
| <u>2004</u>            |                         |          |                        |
| NSF PFI:               | Saxena, Salamo, Foster  | \$ 600k  | Entrepreneur education |

A proposal was submitted to the Department of Education's Graduate Assistantships in Areas of National Need (GAANN) in December 2007, but the proposal was not funded. The feedback will be examined and a new proposal will be submitted. A second proposal was submitted to the National Science Foundations S-STEM program in February 2007, but the decision on whether or not to fund it has not been announced.

A new course was established by Prof. Ron Foster for the summer 2007 session, MEPH 5841 Advanced Research Commercialization Lab. This course is designed to give PhD microEP students a course for modeling and simulation of research commercialization.

#### 5. 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.

The funding for the clerical position in microEP (which was held by Ms. Linda Lancaster) was not funded for next year.

#### 6. Faculty self associated with microEP Graduate Program

|               |  |
|---------------|--|
| Biol & Ag Eng | Jin-Woo Kim<br>Yanbin Li   |
| BioMed Eng    | <u>Mahendra Kavdia</u> Graduate Studies Committee Member<br>Kaiming Ye |
| Chemical Eng  | Robert Beitle<br><u>Rick Ulrich</u> Graduate Studies Committee Member  |
| Chemistry     | Bob Gawley<br>Ingrid Fritsch<br>Xiaogang Peng<br>Ryan Tian             |
| Civil Eng     | Paneer Selvam  |
| Comp Sci/Eng  | Jia Di   |

|                                  |  |
|----------------------------------|--|
| Electrical Eng                   | John Lusth<br>Simon Ang<br>Juan Balda<br>Bill Brown<br>Susan Burkett<br>Magda El-Shenawee<br>Omar Manasreh<br>Alan Mantooth<br>Hameed Naseem<br>Errol Porter<br><u>Len Schaper</u> Graduate Studies Committee Member<br>Vasundara Varadan<br>Vijay Varadan     |
| Industrial Eng<br>Mechanical Eng | Scott Mason<br>Deepak Bhat (Remote NSF assignment until June 08)<br>Matt Gordon<br>Adam Huang<br>Ajay Malshe<br>Bill Schmidt<br>Doug Spearot<br><u>Steve Tung</u> Graduate Studies Committee Member<br>Sulin Zhang<br>Min Zou                                  |
| MicroEP<br>Physics               | Ron Foster (Adjunct)<br>Laurent Bellaiche<br>Henry Fu<br>Eitan Gross<br>Jiali Li<br>Lin Oliver<br><u>Greg Salamo</u> Graduate Studies Committee Member<br>John Shultz<br>Surendra Singh<br>Jak Tchakhalian<br><u>Ken Vickers</u> Director, microEP<br>Min Xiao |

7. Faculty on microEP Graduate Program team

|                      |                               |
|----------------------|-------------------------------|
| Education Assessment | Sean Mulvenon<br>Ronna Turner |
| Sociology            | Douglas Adams                 |

8. Adjunct Faculty of the microEP Graduate Program

|  |   |
|--|---|
| Dr. Russell DePriest<br>Professor Ron Foster | Principal Member Technical Staff, Sandia National Labs<br>Adjunct Assistant Professor |
|--|---|

|                         |  |
|-------------------------|--|
| Dr. Jerry Jenkins       | Sr. Engineer, CFD Research Corporation         |
| 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          | Associate Professor, Purdue University         |
| Dr. David Storm         | US Naval Research Laboratory                   |
| Dr. Jining Xie          | The Pennsylvania State University              |

## **Arkansas Center for Space and Planetary Sciences**

### 1. Significant achievements and changes

#### 1.1 Progress relating to strategic plans and university priorities

##### 1.1.1. The Five Year Plan

The Arkansas Center for Space and Planetary Sciences is now at the end of the second year of its current five-year plan. We have attempted to score ourselves in Table 1, although obviously some of these issues are quite complex and many qualifications could be applied. Nevertheless, we feel we are very much on target in achieving our deliberately ambitious goals.

In the reporting period we heard that the Hera mission was not selected but that a very similar proposal from the University of Arizona was selected. This is bittersweet because while it was a failure for our proposal it was a success for our advocacy of this type of mission in the light of many alternative possibilities. Nevertheless, our team continues to work and be ready to compete as soon as a new possibility arises (goals 1 and 2).

We are on schedule for new sample analysis facilities (goal 3), have made significant improvements to the Keck laboratory facilities (goal 4), and are preparing a large room for a spaceflight instrument facility (goal 5). Our graduate program is at 20 students at year two, on track to reach 50 by year five (goal 6). Our summer REU program is a great success, but we were not happy with our academic year program and are considering better options (goal 7). Our EPO programs are thriving (goal 8). We have several proposals for long term funding (goal 9) and our programs of internal competed grants and for proposal writing and review are a great success (goal 10), obtaining a \$403K NASA grant. We have not succeeded in developing partnerships with other centers on campus (goal 11), but we have had success in increasing industrial interactions (goal 12). Last year we had four, and this year we have two, African-American students in our REU program and this year we admitted an African-American into our graduate program (goal 13). We feel we have satisfied the university's conditions for continued occupancy of the old museum (goal 14) and all of the space center's activities continue to run smoothly although we lack a permanent operational budget (goal 15).

*Table 1. Scorecard at Year Two: Tracking against the Space Center's five year plan\**

| Goal  | Score | Goal  | Score |
|---|-------|---|-------|
| 1 Successfully propose the Hera mission to NASA | 2     | 9 Sustain a long term funding base                | 2     |
| 2 Be a champion for sample return               | 2     | 10 Increase grant support for faculty             | 2     |
| 3 Create national sample analysis facility      | 2-3   | 11 Strengthen interaction with campus centers     | 1     |
| 4 Develop Keck laboratory for space simulation  | 3     | 12 Increase interactions with industrial partners | 2     |
| 5 Create a flight hardware facility             | 2-3   | 13 Increase diversity                             | 2     |
| 6 Build graduate program to 50 students         | 2-3   | 14 Establish permanent physical plant             | 2     |
| 7 Increase undergraduate participation          | 2     | 15 Maintain and expand infrastructure             | 2     |
| 8 Strengthen and grow EPO programs              | 3     |   |       |

\* 1, No progress. 2, Acceptable progress. 3. Goal achieved.

### 1.1.2 New External Advisory Board

This year we applauded the contributions of the External Advisory Board that had seen us through seven years (2000-2007) and asked them to step down in favor of a new Board chosen and appointed, with our concurrence, by Steve Saunders, Chair. The Board formally visits once a year, reviews internal research proposals, and is otherwise available as needed. The new board is listed in Table 2. These colleagues were asked to serve a two-year term. Then they will rotate off in a staggered fashion, two members per year.

### 1.1.3 Infrastructure support for the space center

Our efforts to raise infrastructure support are listed in Table 3. With help from Associate VC Sandra Edwards and Development Officer Emily Smith, we are preparing approaches to the W. M. Keck and the Boeing Foundations. The Barringer Crater Company continues its 16-year support of our public lecture series, describing the program as "highly successful." Congress decided not to earmark the omnibus appropriation bill for FY07 and so we face a year without this support. This could be a catastrophe for us, but with help from the university's Washington D.C. representatives, we have submitted an unsolicited proposal to NASA that they have sent for external review. We should hear in a few weeks. We have assembled a team to write a proposal to NSF to support the REU program and that will begin work in a few weeks.

We continue to believe that the ultimate success of the space center in its efforts to make an impact on the nation's space program is a major endowment. We will continue to look for a mechanism to create this and have an agreement from the university – at least in principle – for us to create a development board.

Table 2. Membership of the new External Advisory Board for the Space Center.

| Name                        | Institution                            |
|-----------------------------|--|
| Stephen Saunders<br>(chair) | NASA Headquarters                      |
| Nathan Bridges              | NASA Jet Propulsion<br>Laboratory      |
| William Cochran             | University of Texas at<br>Austin       |
| Rich Dissly                 | Ball Aerospace                         |
| Alan Howard                 | University of Virginia                 |
| David Grinspoon             | Denver Museum of<br>Nature and Science |

Table 3. Proposals in preparation to support the space center's infrastructure

| PI    | Agency/<br>Foundation       | Title   | Amount      | Status   |
|-------|-----------------------------|---|-------------|----------|
| Sears | W. M. Keck<br>Foundation    | Long term support for the research and<br>education programs at the Arkansas<br>Center for Space and Planetary<br>Sciences  | \$3,000,000 | In prep. |
| Sears | Boeing<br>Foundation        | Interdisciplinary graduate and under-<br>graduate education and training<br>programs in space and planetary<br>sciences   | \$1,188,000 | In prep. |
| Sears | Barringer Crater<br>Company | Barringer Lectures (1991 – present)   | \$58,000    | Funded   |
| Sears | NASA                        | Research initiatives at the University of<br>Arkansas, focused on the investigation<br>of returned samples, together with the<br>associated physical and intellectual<br>infrastructure | \$1,000,000 | Pending  |
| Sears | NSF                         | Research Experience for<br>Undergraduates in the space and<br>planetary sciences  | \$750,000   | In prep. |

## 1.2 Research

### 1.2.1. New faculty hires

1. Fang-Zhen Teng (geosciences) was hired by the geosciences department in order to be a member of the space center and perform cosmochemistry research using the new ICPMS facility. Dr. Teng obtained by PhD at the University of Maryland working on Inductively Coupled Plasma Mass Spectrometry (ICPMS) projects and was a postdoctoral scholar at the University of Chicago working on meteorite projects.

2. Julia Kennefick (physics) has been an important contributor to the teaching and research activities of the physics department and the space center for three years supported by an NSF Advance award. She was hired in response to a joint request from the department and the space center and her start-up funds are provided by the space center (\$100K) and Fulbright College (\$26K).

### 1.2.2 Visiting Researchers

Vincent Chevrier joined the Space Center in Fall 2005 as a post-doctoral fellow. His research efforts are focused around water on Mars and planetary simulations. Additionally, Vincent mentors both graduate and undergraduate students.

Other visiting researchers made short term visits of a few days, met with students and gave research seminars and/or public lectures. These were Sandra Pizzarello, Arizona State University, Clive Neal, University of Notre Dame, Indiana, Fang-Zhen Teng, University of Chicago, M. Pasek, Arizona State University, Tempe, Joe Bosenberg, State University of New York, K. S. Matthew, Lawrence Livermore National Laboratories.

### 1.2.2 Industrial partners

Center goal 12 is to increase collaborations with our industrial partners. During the reporting period, Shauntae Moore graduated from the space center with a PhD in chemistry and was hired by Bioengineering resources Inc., one of our industrial partners. Collaboration with another industrial partner, Space Photonics Inc., resulted in a \$403,000 research grant.

### 1.2.3. Competed Research Awards

A third round of the Space Center competed research program was announced on February 1<sup>st</sup> with a proposal deadline of April 1<sup>st</sup> and awards made on May 1<sup>st</sup> (Table 4). The External Advisory Board evaluated the six-page proposals. Nine research awards were made for a total of \$221,518. Two awards were for faculty in engineering departments, seven went to faculty in science departments. An emphasis was given to faculty wishing to nurture collaborations and support students. In this way, the External Advisory Board monitors faculty research and student support (Fig. 1). The proposals will support six graduate students in the SPAC program and six undergraduate summer interns.

It should be noted, that in several instances the board recommended support for only one year observing that the work is competitive for national funding.



Table 4. Results of competed research proposals for 2007\*

| PI                | Dept     | Award Amount | Title  |
|-------------------|----------|--------------|--|
| Mack Ivey         | BIOS     | \$40,905     | Microbial iron reducers: model organisms for subsurface planetary biospheres                     |
| Larry Roe         | MEE<br>G | \$7,982      | Continued development of a sampler for the robotic return of asteroid surface samples            |
| Tim Kral          | BIOS     | \$19,940     | Methanogens as a model for life on Mars  |
| Claud Lacy        | PHYS     | \$23,411     | Mineralogy and classification of NEOs  |
| Julia Kennefick** | PHYS     | \$50,000     | Improving selection efficiencies in quasar surveys using 2MASS catalogs                          |
| Rick Ulrich       | CHEG     | \$30,859     | Seismic imaging of local subsurface layering and icy regoliths from planetary landers and rovers |
| Vincent Chevrier  | SPAC     | \$7,775      | Stability and evolution of clay deposits on Mars   |
| Daniel Kennefick  | PHYS     | \$11,686     | Producing accurate wave forms for gravitational waves from highly eccentric orbits in EMRIs      |
| John Dixon        | GEOS     | \$28,960     | Martian gully formation genesis using remote sensing and laboratory experimental techniques      |

\* The review is handled by the chair of the External Advisory Board. Final funding levels reflect evaluation, requested amount, and space center priorities.

\*\*Funds provided as part of Dr. Kennefick's start-up package, as agreed with Dr. Kennefick, the department, and the college.

Table 5. Proposals submitted to NASA by space center faculty under our new procedures.

| PI          | Co-I  | Title  | NASA Program* | Amount    | Status  |
|-------------|---|--|---------------|-----------|---------|
| Rick Ulrich | L. Roe, V.<br>Chevrier, D.<br>Sears, M.<br>Leftwich | Optical probe for regolith analysis (OPRA)                   | PIDDP         | \$402,995 | Funded  |
| Larry Roe   | D.Sears, R.<br>Gawley                               | An icy-regolith collector for robotic sample return missions | PIDDP         | \$403,283 | Pending |

|                  |  |  |       |           |                           |
|------------------|--|--|-------|-----------|---------------------------|
| Larry Roe**      | J. Dixon, V. Chevrier, R. Ulrich, D. Sears | Fluid mechanics and geomorphological consequences of liquid flows on the martian surface | MFR   | \$293,147 | In prep. Deadline 17-7-07 |
| Derek Sears      | None                                       | Radiation and thermal history of stardust particles                                      | DDAP  | \$421,090 | Pending                   |
| Mack Ivey        | D. Sears, V. Chevrier                      | Sulfate reduction: a model for subsurface life on Mars                                   | ASTRO | \$495,371 | Pending                   |
| Tim Kral         | R. Ulrich                                  | Factors affecting methane production by methanogens under Mars-like conditions           | ASTRO | \$551,380 | Pending                   |
| Tim Kral**       | M. Ivey, V. Chevrier, R. Ulrich, D. Sears  | Determination of martian bio-markers   | ASTRO | \$540,000 | In prep. Deadline 17-7-07 |
| Claud Lacy       | D. Sears                                   | Characterization of NEA and MBA  | PLAS  | \$359,580 | Pending                   |
| Vincent Chevrier | L. Roe, D. Sears, R. Ulrich                | Dynamics of water vapor transport in the martian regolith                                | MFR   | \$297,871 | In prep. Deadline 17-7-07 |

\* PIDDP, Planetary Instruments Design and Development Program; MFR, Mars Fundamental Research; DDAP, Discovery Data Analysis Program; ASTRO, Astrobiology; PLAS, Planetary Astronomy.

\*\*Previously submitted as preproposals to the state NASA EPSCoR competition

Participants in this program are required to give a six-month oral progress report to the annual meeting of the External Advisory Board and a final written report that will be a factor in future funding decisions.

#### 1.2.4. Proposal writing and review procedures

For a second year the Space Center has offered a proposal writing and review procedure for faculty in the Space Center. The Space Center has put in place a procedure for assisting faculty members in seeking external funding. This is modeled on a similar system in use at the Jet Propulsion Laboratory. A proposal manager (the space center manager) guides the proposers through the proposal writing process, drawing up a timeline, checking for compliance with guidelines, and having responsibility for proposal budgets. A team of three University of Arkansas faculty members (of which two are Space Center faculty) reviews proposals and communicates their reviews in a formal meeting between the Internal Review Panel and the proposal team. A list of proposals submitted this year is given in Table 5.

#### 1.2.5. Equipment and facilities

Brief details of our progress with equipment and facilities are as follows:

1. ICPMS. Clean rooms ready, equipment due to be delivered July 2007, we need to work with the Geosciences Department to prepare wet laboratories.
2. Thermoluminescence clean rooms. Clean rooms 90% complete, need to buy furniture.
3. Optical microscopy and Extraterrestrial Secure Curation Facility. This is where the center houses optical microscopy and where, with oversight from the police, we store lunar and martian meteorites. The facility is open and operational pending cleaning after completion of the TL facility.
4. Spaceflight Instrument Laboratory. Newly cleaned, waiting for the university to paint pending installation of partitions.
5. Planetarium. Structure 90% complete, existing analog projector currently under repair, new digital projector will be purchased before the end of July 2007.

### 1.3 Education

#### 1.3.1 Undergraduate programs

*The Research Experience for Undergraduates (REU) program.* This is an interdisciplinary summer program that is funded by this award. This ten-week program brought 10 students from a variety of science and engineering backgrounds to the University of Arkansas 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 posters, participate in end of term orals, and attend a follow-up national conference. In recent years, about 75% of the participants in this program presented their work at the annual Lunar and Planetary Science conference. Table 6 is information on this years' program and its participants.

The students go on several field trips throughout the summer that reflect the major disciplines in the Space Center. At the Oklahoma Aquarium, students get a behind the scenes look at what life in extreme environments might be like. On their trip to western Oklahoma, the students observe land formations that are comparable to those on Mars. At the Johnson Space Center (JSC) in Houston, students get a chance to visit the lunar and meteorite processing laboratories and take a public tour of the JSC and other facilities.

A good sense of many aspects of this program can be had from the informal photographs taken by the students and posted at the following URL: [http://www.uark.edu/campus-resources/sears/REU program](http://www.uark.edu/campus-resources/sears/REU_program).

*Table 6. Participants in the 2007 summer research program in space and planetary sciences for undergraduate students\**

| Name          | School        | State | Major        | Race  | Mentor      | Title                         |
|---------------|---------------|-------|--------------|-------|-------------|-------------------------------|
| Shiblee Barua | Berea College | KY    | Physics/Math | Asian | D.Kennefick | Gravitational Waves           |
| Kelly Howe    | SUNY Geneseo  | NY    | Geol. Sci.   | White | J. Dixon    | Understanding martian gullies |

|                      |                          |    |                       |       |             |  |
|----------------------|--------------------------|----|-----------------------|-------|-------------|--|
| Obadiah Kegege       | UT Pan-American          | TX | Elec. Engr.           | Black | L. Roe      | A probe for regolith analysis              |
| David Kennington     | Virginia Commonwealth U. | VA | Physics/Math          | White | V. Chevrier | Adsorption kinetics in martian clay        |
| Maxwell Mikel-Stites | U. Rochester             | NY | Physics/Astronomy     | White | R. Ulrich   | Sound transmission in geological materials |
| Kenechukwu Obi       | Grinnell College         | IA | Physics               | Black | J. Kenefick | Quasar selection methods                   |
| Santosh Pudasaini    | St. Peters College       | NJ | Biochemistry/Math     | Asian | M. Ivey     | Iron reducing bacteria – life on Mars      |
| Quintin Schiller     | U. Wisconsin             | WI | Physics/Astrophysics  | White | C. Lacy     | Rotational period of NEA's                 |
| Ashley Stewart       | U. Arkansas              | AR | Physics               | White | J. Kenefick | Redshift quasar surveys                    |
| Krista White         | Ball State U.            | IN | Physics/Astron./Geol. | White | D. Sears    | CO <sub>2</sub> ice on Mars                |

\* Name, undergraduate institution, undergraduate major, ethnicity, mentor and research topic are given.

### *The Research Experience for Arkansas Honors Undergraduate program.*

With encouragement from the Deans of Fulbright College and the Honors College we offered an academic year program of undergraduate research modeled on our summer program. We do not consider it a success, since while we had 20 positions we received only four applications (five by the end of the year) and only two wanted to continue into a second year. The space center faculty are suspending the program for a year while they consider alternative approaches. Nevertheless, each of the students was required to attend the annual meeting of the Arkansas Academy of Science and two were among the four short-listed for the best undergraduate presentations at the meeting.

Two also attended the American Astronomical Society meeting in Hawaii and one received an honorable mention for her poster presentation. The students were therefore of high quality and received excellent mentoring, but our infrastructure modeled on the summer program needs a complete overhaul.

Some informal pictures from this meeting can be seen at <http://www.uark.edu/campus-resources/sears/honors/2007AAS/>.

### 1.3.2 Graduate programs

The program graduated its third student this year. Lisa Billingsley obtained a M.S. degree. Two students withdrew from the program and one failed candidacy.

Five students entered the program on January 2005, four in August 2005, two in January 2006, seven in August 2006, and six will join the program in the fall 2007. As of fall 2007, 21 students will have been admitted to the program since its creation in January 2005. Three have withdrawn or failed so that by the fall the program will have 19 graduate students, well on its way to the target of a steady state of fifty students in five years. The program is not only attracting good students from around the country, but it is also attracting a highly interdisciplinary class of students.

The high quality of the students participating in this program is worth stressing. For example, one is a highly prestigious Distinguished Doctoral Fellow, four are Doctoral Academy Fellows and one was a NASA fellow. The DDF and DAF are University of Arkansas scholarships provided by funds from the Walton Family Foundation for especially talented graduate students.

During this year, the three two-week workshops (communications, ethics, entrepreneurship) were removed from the catalog and replaced by a one-hour course in professional development to be taught in the spring semester. Graduate-level courses in astronautics and astrobiology have been approved.

This year saw the second of the Space Center graduate orientation programs. A central component of this is the annual graduate field trip that this time visited sites in northern Arizona, Meteor Crater, Lowell Observatory, the Grand Canyon, the Painted Desert, the Petrified Forest, and Sunset Crater. Last year the trip was to western Oklahoma to see geological features similar to those found on Mars. Next year, the trip will be a circular tour of Arkansas. These field trips are designed by students and led by John Dixon of geosciences and Derek Sears of chemistry and biochemistry.

Some informal pictures from this program can be seen at <http://www.uark.edu/campus-resources/sears/SPAC>.

## 1.4 Management

### 1.4.1 Faculty governance

Derek Sears is the current Director of the Space Center and of the interdisciplinary graduate in space and planetary sciences. The only change in his position this year is that his annual merit evaluation will not be performed in the chemistry department. Instead, the Dean of Fulbright College has agreed to instigate a process in which space center faculty provide this for him. Rick Ulrich has now completed his first year as deputy director, assuming particular responsibility for coordinating graduate courses – one of our most challenging tasks – and has fulfilled the duties admirably. He also provides support for the director and the space center in a great many other ways.

### 1.4.1 Personnel

The following are the space center managers/administrators:

- Hazel Sears is Space Center Manager under the university title of Project/Program Manager. She is responsible for all aspects of space center management and finances.
- Jessica Park is the Space Center Programs Administrator under the university title of Project/Program Specialist. She has special responsibility for managing undergraduate programs and education and public outreach.
- Walter Graupner is the Space Center Laboratory Manager under the title scientific research technologist. His responsibilities include management and maintenance of all the Space Center's research and instruction equipment, especially the Andromeda environmental chamber.

### 1.4.2 Institutional commitments

During the reporting period, the University of Arkansas has committed the following resources to the space center.

- An endowed professorship in space and planetary sciences was created and awarded to Space Center Director Derek Sears. Funds from the W. M. Keck Foundation were used to match funds from the Walton Family Foundation to create the W. M. Keck Professorship in Space and Planetary Science.
- Two faculty members, Drs. Teng and Kennefick described above, have been hired whose presence will strengthen the space center and their respective departments.
- The University has approved a request from the Space Center that we erect the planetarium on the main floor of the old museum. It has also agreed to let us utilize the building for our programs depending on our funding situation in the fall of 2007. It is our belief that we have satisfied their requirements.

## 2. Achievements in teaching and research

### 2.1 Awards including external funding

The following Space Center faculty members have received substantial external funding during this performance period.

Claud Lacy of the Physics department is in the second year of an NSF grant of \$90,000 to study WEBSCOPES for use in undergraduate research.

Rick Ulrich of Chemical Engineering has received a grant (~\$403,000) from NASA to work with Space Photonics a local industrial partner of the Space Center to develop a space-borne instrument for infrared spectroscopy of planetary regoliths.

Derek Sears of Chemistry and Biochemistry is in the third year of an award of \$0.5M from the W. M. Keck foundation in July 2004 to support his water on Mars research. He also has been named the W. M. Keck professor of space and planetary sciences as mentioned earlier.

### 2.2 Conference presentations and Publications

Center faculty members and students (graduate and undergraduate) made presentations (~20) at several national conferences (~6) covering all the major science and engineering disciplines.

#### Publications (incomplete list, July 2006 to June 2007)

Denson, J.; Chevrier, V.; Sears, D. W. G., (2006), Sulfate Brine Stability Under a Simulated Martian Atmosphere, Workshop on Martian Sulfates as Recorders of Atmospheric-Fluid-Rock Interactions, October 22-24, 2006 in Houston, Texas. LPI Contribution No. 1331, 2006, p.34.

- Colangeli, Luigi; Sears, Derek W. G.; Seiferlin, Karsten, (2006), Preface, Planetary and Space Science, Volume 54, Issue 11, p. 1033-1033.
- Gildea, K. J.; Burgess, R.; Lyon, I.; Sears, D. W., (2006), Stable Iron Isotope Analyses of Metal Grains in Ordinary Chondrites by MC-ICP-MS, Meteoritics & Planetary Science, Vol. 41, Supplement, Proceedings of 69th Annual Meeting of the Meteoritical Society, held August 6-11, 2006 in Zurich, Switzerland., p. 5284.
- Chevrier, Vincent; Denson, J.; Sears, D., (2006), Sulfate Brine Stability Under a Simulated Martian Atmosphere, American Astronomical Society, DPS meeting #38, #61.05
- McAllister, Steven A.; Kral, Timothy A., (2006), Methane Production by Methanogens Following an Aerobic Washing Procedure: Simplifying Methods for Manipulation, Astrobiology, Volume 6, Issue 6, pp. 819-823.
- Kendrick, M. G.; Kral, T. A., (2006), Survival of Methanogens During Periods of Desiccation: Implications for Life on Mars, Meteoritics & Planetary Science, Vol. 41, Supplement, Proceedings of 69th Annual Meeting of the Meteoritical Society, held August 6-11, 2006 in Zurich, Switzerland., p. 5011.
- Kendrick, Michael G.; Kral, Timothy A., (2006), Survival of Methanogens During Desiccation: Implications for Life on Mars, Proceedings of 69th Annual Meeting of the Meteoritical Society, held August 6-11, 2006 in Zurich, Switzerland., p.5011
- Chevrier, V.; Mathé, P. E., (2006), Mineralogy and evolution of the surface of Mars: A review, Planetary and Space Science, Volume 55, Issue 3, p. 289-314.
- Fishbaugh, K. E.; Poulet, F.; Langevin, Y.; Chevrier, V.; Bibring, J.-P., (2006), Formation of the Martian North Polar Gypsum Deposit During the Amazonian, Fourth International Conference on Mars Polar Science and Exploration, October 2-6, 2006, Davos, Switzerland. LPI Contribution No. 1323, p. 8041.
- Chevrier, V.; Roy, R.; Le Mouélic, S.; Borschneck, D.; Mathé, P. E.; Rochette, P., (2006), Spectral characterization of weathering products of elemental iron in a Martian atmosphere: Implications for Mars hyperspectral studies.
- Chevrier, V.; Mathé, P.-E.; Rochette, P.; Grauby, O.; Bourrié, G.; Trolard, F., (2006), Iron weathering products in a CO<sub>2</sub> + (H<sub>2</sub>O or H<sub>2</sub>O<sub>2</sub>) atmosphere: Implications for weathering processes on the surface of Mars, Geochimica et Cosmochimica Acta, v. 70, iss. 16, p. 4295-4317.
- Rochette, P.; Gattacceca, J.; Chevrier, V.; Mathé, P. E.; Menvielle, M., (2006), Magnetism, Iron Minerals, and Life on Mars, Planetary and Space Science, Volume 54, Issue 11, p. 1034-1045.
- Chittenden, Julie; Chevrier, V.; Sears, D. W.; Roe, L. A.; Bryson, K.; Billingsly, L.; Hanley, J., (2006), Insights into Interactions of Water Ice with Regolith under Simulated Martian Conditions., 38th Lunar and Planetary Science Conference, (Lunar and Planetary Science XXXVIII), held March 12-16, 2007 in League City, Texas. LPI Contribution No. 1338, p.1253.
- Chittenden, Julie; Chevrier, V.; Sears, D. W.; Roe, L. A.; Bryson, K.; Billingsly, L.; Hanley, J., (2006), Insights into Interactions of Water Ice with Regolith under Simulated Martian Conditions. American Astronomical Society, DPS meeting #38, #61.04.
- Lebofsky, Larry A.; Lebofsky, N. R.; Sears, H.; Sears, D., (2006), Meteorite Magazine: Promoting Science, Discovery, And Education, American Astronomical Society, DPS meeting #38, #46.02.

- Sears, Derek W.; Craig, J., (2006), Natural Thermoluminescence And The Radiation And Thermal Histories Of Stardust Particles., American Astronomical Society, DPS meeting #38, #29.08.
- Moore, Shauntae R.; Sears, Derek W. G., (2006), On Laboratory Simulation and the Effect of Small Temperature Oscillations About the Freezing Point and Ice Formation on the Evaporation Rate of Water on Mars, *Astrobiology*, Volume 6, Issue 4, pp. 644-650.
- Gavin, P.; Chevrier, V.; Rochette, P., (2007), Thermally Transformed Nontronite as a Component of the Red Dust Layer on Mars, 38th Lunar and Planetary Science Conference, (Lunar and Planetary Science XXXVIII), held March 12-16, 2007 in League City, Texas. LPI Contribution No. 1338, p. 2295.
- Ulrich, R.; Chevrier, V.; Chittenden, J. D.; Kral, T.; Roe, L., (2007), Comparison of Numerical Modeling and Temperature Records from the Mars Pathfinder Landing Site, 38th Lunar and Planetary Science Conference, (Lunar and Planetary Science XXXVIII), held March 12-16, 2007 in League City, Texas. LPI Contribution No. 1338, p. 1166.
- Altheide, T.; Chevrier, V.; Kral, T., (2007), Oxidation of Iron and Metabolization of Carbonate Through Methanogenesis: Implications for the Early Terrestrial Environment, 38th Lunar and Planetary Science Conference, (Lunar and Planetary Science XXXVIII), held March 12-16, 2007 in League City, Texas. LPI Contribution No. 1338, p. 1063.
- Ostrowski, D. R.; Chevrier, V.; Chastain, B. K.; Sears, D. W. G., (2007), Experimental Study of the Water Vapor Interaction with Clay Regolith During Ice Sublimation on Mars, 38th Lunar and Planetary Science Conference, (Lunar and Planetary Science XXXVIII), held March 12-16, 2007 in League City, Texas. LPI Contribution No. 1338, p. 2097.
- Gildea, K. J.; Burgess, R.; Lyon, I. C.; Sears, D. W., (2007), Stable Iron Isotope Analyses of Metal Grains in Ordinary Chondrites by MC-ICP-MS, 38th Lunar and Planetary Science Conference, (Lunar and Planetary Science XXXVIII), held March 12-16, 2007 in League City, Texas. LPI Contribution No. 1338, p. 1782.
- Chittenden, J. D.; Sears, D. W. G.; Chevrier, V., (2007), Effect of Wind on the Stability of Water Ice Under Martian Conditions, 38th Lunar and Planetary Science Conference, (Lunar and Planetary Science XXXVIII), held March 12-16, 2007 in League City, Texas. LPI Contribution No. 1338, p. 1253.
- Bryson, K. L.; Chevrier, V.; Sears, D. W. G., (2007), The Effect of a Fine-grained Basaltic Layer on the Evaporation of Ice Under Martian Conditions, 38th Lunar and Planetary Science Conference, (Lunar and Planetary Science XXXVIII), held March 12-16, 2007 in League City, Texas. LPI Contribution No. 1338, p. 1246.
- Craig, J.; Sedaghatpour, F.; Gucsik, A.; Sears, D. W. G., (2007), Fragments of Separated Opaque Matrix from the Semarkona Unequilibrated Ordinary Chondrite, 38th Lunar and Planetary Science Conference, (Lunar and Planetary Science XXXVIII), held March 12-16, 2007 in League City, Texas. LPI Contribution No. 1338, p. 1095.
- Sears, D.; Gucsik, A.; Craig, J.; Sedaghatpour, F.; Graupner, W., (2007), A Thermoluminescence Study of Semarkona Chondrite: An Application on Determination of Metamorphic History of Stardust Particles, 38th Lunar and Planetary Science Conference, (Lunar and Planetary Science XXXVIII), held March 12-16, 2007 in League City, Texas. LPI Contribution No. 1338, p. 1055.
- Gucsik, A.; Sears, D. W. G.; Craig, J.; Sadeghatpour, F.; Graupner, W., (2007), Cathodoluminescence Properties of the Semarkona Chondrite: An Implication for Mineralogy of Interstellar Dust Particles of the Stardust Mission, 38th Lunar and



Planetary Science Conference, (Lunar and Planetary Science XXXVIII), held March 12-16, 2007 in League City, Texas. LPI Contribution No. 1338, p. 1051.

Denson, J.; Ivey, D. M.; Sears, D. W. G.; Gusik, A.; Vidéki, R., (2007), Cathodoluminescence and Its Application for Biosignature Analysis of Mn-containing Biogenic Minerals: A Review, 38th Lunar and Planetary Science Conference, (Lunar and Planetary Science XXXVIII), held March 12-16, 2007 in League City, Texas. LPI Contribution No. 1338, p. 1009.

## 2.3 Education and Public Outreach

### 2.3.1 Public Lectures

The Barringer Lectures is a public lecture series in the Space Center funded by the Barringer Crater Company. Lectures are held every spring and fall; this series is now in its 15<sup>th</sup> year.

Dr. Sandra Pizzarello, Arizona State University. 12/4/2006 - "*The Chemistry That Preceded Life's Origin: A Study Guide from Meteorites.*"

Dr. Clive Neal, University of Notre Dame. 2/12/2007 - "*The Moon: Inspiring the World 40 Years After Apollo.*"

The Space Center gave the first of the annual *Arkansas Lectures in Space and Planetary Science* series of public lectures in 2006-2007.

20<sup>th</sup> September 2006 – “The Hera Project – Searching for our Beginnings to Find our Future”.  
Dr. Derek Sears

15<sup>th</sup> November 2006 - "*Traveling at the speed of Thought*". Dr. Daniel Kenefick

21<sup>st</sup> February 2007 - "*Distance Across the Cosmos: From Hipparchus to the Accelerating Universe*". Dr. Julia Kenefick

18<sup>th</sup> April 2007 - "*Geology in Frozen Places*". Dr. John Dixon

Four invited lecturers gave colloquia in the Geosciences Department and in the Space Center. Their Space Center talks were:

3/8/2007 - "*Investigating Oxygen Isotopic Exchange in Chondrules in the Early Solar Nebula*".  
Dr. Joe Bosenberg - American Museum of Natural History

3/2/2007 - "*Lithium Isotopic Systematics of the Continental Crust*". Dr. Fang-Zhen Teng -  
University of Chicago.

2/26/2007 - "*In a Strange Land: Reduced Meteorite Minerals in the Origin of Life and Space Exploration*". Dr. Matthew Pasek - Laplace NAI Center at the University of Arizona

2/16/2007 - "*Nobel Gas Isotopic Signatures as Tracers to Solar System Processes*". Dr. K.J. Mathew - Lawrence Livermore National Laboratory

The Space Center, a campus group that encourages women scientists, and the proposal manager at JPL for the Hera mission sponsored two *ad hoc* talks:

11/16/2006 - "*Kepler, A Search for Habitable Planets*". Dr. Janice Voss - NASA Ames  
Research Center

### 2.3.2 Teacher workshops

#### STORI

For the third year we funded and hosted a one-week workshop called Summer Triangle: Observing, Research, and Inquiry (STORI) for school teachers of grades 4-8 who want to learn more about basic astronomy concepts, observing, and current exploration of our solar system. The program consists of 30 contact hours during the week-long workshop and 30 hours of on-line discussions during the school year. STORI is designed to help teachers reach the goals of the Arkansas Science Standards for these grades. The project staff are Dr. Larry Lebofsky, a planetary scientist and educator from the University of Arizona; and Nancy Lebofsky, an instructional specialist now working with the Science Center of Inquiry. Participating teachers received a telescope for their personal use during the school year and a subscription to Night Sky magazine.

Details of the participants for this year are listed in Table 8.

*Table 8. Participants in the teacher workshops, summer 2007, and their schools.*

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#### **WebScopes in the Classroom**

|                 |                     |
|-----------------|---------------------|
| William Thorne  | Talequah High       |
| Charlie Hammett | Mtn. Home Jr. High  |
| Eugene Putz     | Kirby High          |
| Matthew Kennedy | Oark High           |
| Tom Merritt     | Eureka Spgs. Middle |
| Carrie Moore    | McDonald Cty High   |
| Joan Sims       | White Hall Jr. High |

#### **STORI**

|               |                       |
|---------------|-----------------------|
| Bea Malcolm   | Benton Middle         |
| Leslie Bailey | Randall Lynch Middle  |
| Carol Nichols | Elgin Milton Elem.    |
| Gail Nebben   | McNair Middle         |
| Kelly Allison | Siloam Springs Middle |
| Karen Brown   | Holt Middle           |
| Gary Jernigan | Hector Elem.          |
| Kerry Taylor  | Bayyari Elem.         |

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#### Webscopes

WebScopes is a workshop is led by Dr. Claud H. Sandberg Lacy who has developed the use of robotic observing techniques as a tool for use in the classroom. He has helped build robotic WebScopes in Fayetteville, Arkansas, (the URSA WebScope) and in Silver City, New Mexico (the NFO WebScope).

The WebScopes workshop is intended for teachers who want to learn more about observational astronomy using robotic observing techniques. They learn the basic concepts about how the sky works as well as the principles of digital imaging and image analysis. No specific science background is needed, just the willingness to work with others in a learning environment and a commitment to take what they learn back to their school.

### 2.3 Publications

#### Space Notes

The Space Center continues to publish its monthly newsletter, *Space Notes* that is widely circulated on campus and off campus to our colleagues at other institutions and to our senators and congressional representatives.

#### Meteorite magazine

The quarterly magazine *Meteorite*, produced by Joel Schiff and his colleagues in Auckland, New Zealand, since 1995, has moved to the space center. The journal was created to satisfy a growing need for amateurs, collectors, dealers, educators and researchers interested in meteorites to have a forum for communication. The magazine has satisfied that need very successfully. *Meteorite* has earned the trust and loyalty of a large world-wide following of subscribers and advertisers.

Under the new arrangements, Larry and Nancy Lebofsky, of the University of Arizona, will be joint Editor and Hazel Sears will be the Managing Editor. Derek Sears, as director of the Space Center, will be the Publisher. Dr. Lebofsky's background is in planetary sciences, specializing in asteroids. He and Nancy have spent over 15 years in education and public outreach with a particular emphasis in stressing the role of amateurs in science and the need for communication between researchers, amateurs and professionals in other fields.

### 3. Achievements of students, former students, alumni (incomplete)

#### 3.1 Students

- Melissa Franzen, graduated with a PhD in the space and planetary sciences assumed a staff position at JPL where she is now on the permanent staff involved in mission planning.
- Julie Chittenden won the prestigious Dworkin award for the best student poster presented at the 38<sup>th</sup> Lunar and Planetary Science Conference.
- Travis Altheide, was awarded a place in the summer research program at the NASA Ames Research Center.
- Ashley Stewart (undergraduate researcher with the space center) won an honorable mention for her poster at the American Astronomical Society meeting in Hawaii this year for the best student poster at the meeting.
- Mike Hinds, undergraduate researcher in the Space Center obtained a place in the summer REU at NASA Ames Research Center.

### 3.2 Former Students

➤ Tahirih Motazedian, REU summer 2002, is a member of the HiRISE science team at Arizona State University. HiRISE is a high resolution imager in the NASA Mars Reconnaissance Orbiter spacecraft.

### **Cell and Molecular Biology**

The Cell and Molecular Biology (CEMB) program currently has 71 faculty (12 new faculty were added this year and 2 withdrew). Dr Douglas Rhoads continued as program director beginning his second year. The program anticipates a budget overrun of approximately \$21,000 because of an over-extended research assistantship budget inherited from the previous director. We anticipate a budget overrun of between \$6000 and \$21,000 for fiscal year 2008 depending on how little is spent on teaching and program costs. The program has already informed Vice Provost Geren of the expected cost overruns which resulted from expiration of grant support for current graduate students.

A Program Advisory Committee was elected by the faculty. The Program Advisory Committee completed a Program Rules and Procedures document which was adopted by vote of the faculty in May 2007. During summer 2007, the Program Advisory Committee will be reviewing faculty participation.

The CEMB program, in concert with the Department of Animal Sciences and Mullins Library, sponsored a two-day training workshop in May 2007 for instruction on “A Field Guide to Genbank and NCBI Molecular Biology Resources.” The course was organized by Dr. David Kreider and enrolled over one hundred faculty and students. The program included lectures by National Center for Biotechnology Information representatives and hands-on computer training.

Below are summarized the student-related activities of the program including graduations, grant activity, publications, presentations, and post-graduation placement.

#### 1) Student Graduation and Admissions:

##### Students Graduated:

Summer 2006: 4 MS, 0 PhD

Fall 2006: 1 MS, 3 PhD

Spring 2007: 0 MS, 0 PhD

Summer 2007 (expected): 1 MS, 3 PhD

##### New Students Admitted:

Fall 2006: 2 MS, 10 PhD

Spring 2007: 1 MS, 4 PhD

Fall 2007 (in progress): 1 MS, 6 PhD

Current Active Student Numbers: 7 MS, 40 PhD

Anticipated Student numbers for the start of Fall 2007: 7 MS, 46 PhD

2) Grants received for which CEMB students are part of the project:

DOE grant # DE-FG02-01ER15161(3rd year funding) Henry, PI; Kumar, CoI; student: **N Marty**  
DOE grant# DE-FG02-01ER15161 (new 3 yr award to begin Aug, 2007) Henry, PI; Kumar and Goforth, CoIs. Student: **N Marty**

A biotector for rapid on-site screening of breeder chickens for high feed efficiency. NSF STTR Phase. Grant No. 0512668 (Li, Su, Pumford, Bottje). Student: **C Ojano-Dirain**

1 R01 GM070971 8/01/2005 – 7/31/2009; NIH/NIGMS; \$339,000; RKoeppe; Arkansas subproject annual direct costs \$105,000; Putting Molecular Dynamics to the Test: Ion Permeation. Student: **J Rankenberg, A Miller**

Engineering Ultrasensitive, Electrically Addressable Nanotube-Wire Nanosensors Through Controlled DNA-Nanotube Interfacin”; USDA NRI CSREES; Kim, Deaton, and Tung. Student: **N. Kotagiri**

Large-Scale DNA Associative Memories; Emerging Models and Technologies (EMT) NSF; Deaton and Kim. Student: **J.S. Lee**

Exploration of DNA-Based Nanoscale Building Block (DNAnBLOCK) for Controllable and Scalable Fabrication of Active Nanostructures; Nanoscale Exploratory Research NSF; Kim and Deaton. Student: **J.S. Lee**

NIH R15AG21896-01, Double stranded breaks in aged thymocytes 7/01/03-8/31/07: Total costs: \$213,750; Annual direct costs: \$50,000; P.I.: J.M. Durdik; Student: **J. Hesse, M. Faulkner**

Breeding soybeans for tofu and natto production; Blue Horizon Inc.; 2002-2007; \$250,000; PI: P Chen; Student: **B. Zhang**

NIH R15 AR052670-01, Autoimmune Vitiligo: Gene Expression During Pathogenesis, 7/01/05-6/30/08: Total costs: \$ 208,000, annual direct \$50,000; P.I.,G. F. Erf; Students: **B. L. Plumlee, N. B. Tinsley, K. D. Bateman**

USDA-CSREES grant# 2006-33120-17718 (3 year grant, \$324,137) PI: Srivastava, Student: **Aydin Akbudak**

Arkansas Biosciences Institute: The role of histones in centromere function and chromosome segregation in the yeast *Saccharomyces cerevisiae*. \$ 31,140 PI: Inés Pinto (7/1/06-5/13/07). Student: **R. Danforth**

National Science Foundation: The Hda1 complex and centromere function in budding yeast. PI: Pinto \$419,000 Awarded, pending activation (June 1, 2007-May 31, 2010) Student: **R. Danforth**

NSF grant #0641347, Function of Cell Identity Factors in Tissue-Specific Programmed Cell Death; 05/01/07-04/30/10; Total Project Cost: \$ 330,000; PI: M. Lehmann; Students: **J. Liu; N. Murali** (starting Fall 2007)

3) Publications with CEMB students as co-authors

1. **N. Marty**, R Henry, R Goforth. 2007. Role of a Membrane-activated Structural Switch Mechanism in Signal Recognition Particle Receptor Function. Cell: (in review).
2. Bottje, W., N. Pumford, **C. Ojano-Dirain**, M. Iqbal, and K. Lassiter, 2006. Feed efficiency and Mitochondrial Function. Poult. Sci. 85:8-14.

3. K. Lassiter, M. Iqbal, N. R. Pumford, **C. Ojano-Dirain**, N. Tinsley, T. Wing, M. Cooper, and W. Bottje, 2006. Differential expression of mitochondrial and extra-mitochondrial proteins in lymphocytes of low and high feed efficient male broilers. *Poultry Sci.* 85:2251-2259.
4. **C. Ojano-Dirain**, N.B. Tinsley, T. Wing, M. Cooper and W.G. Bottje, 2007. Membrane Potential and H<sub>2</sub>O<sub>2</sub> Production in Duodenal Mitochondria from Broiler Chickens (*Gallus gallus domesticus*) with Low and High Feed Efficiency. *Comparative Biochemistry and Physiology*, 147: 934-941.
5. **S. Bailes**, J. Devers, J.D. Kirby and D.D. Rhoads. (2007) An Inexpensive, Simple Protocol for DNA Isolation from Blood for High Throughput PCR or Restriction Endonuclease-based Genotyping. *Poultry Science* 86:102-106.
6. **Calhoun, L. N.** and Y. M. Kwon. 2006. Minireview: *Salmonella*-based plague vaccines for bioterrorism. *Journal of Microbiology, Immunology and Infection.* 39, 92-97.
7. Kwon, Y. M., **L. N. Calhoun**, and M. M. Cox. 2007. *Salmonella*-based vaccine for infectious diseases. *Expert Review of Vaccine.* 6, 147-152.
8. J.-W. Kim, E.V. Shashkov, E.I. Galanzha, **N. Kotagiri**, and V.P. Zharov. 2007. Photothermal antimicrobial nanotherapy with self-assembling carbon nanotube clusters. *Lasers in Surgery and Medicine.* (in press)
9. J.-W. Kim, **N. Kotagiri**, J.-H. Kim, and R. Deaton. 2006. *In situ* fluorescence microscopy visualization and characterization of nanometer scale carbon nanotubes labeled with 1-pyrenebutanoic acid, succinimidyl ester. *Appl. Phys. Lett.* 88:213110.
10. **Kannan L**, Rath NC, Liyanage R., and Lay Jr. J. O., 2007. Identification and characterization of thymosin  $\beta$ 4 in chicken macrophages using whole cell MALDI-TOF, *Annals of NY Acad Sci.* (in press).
11. Rath NC, **Kannan L**, Pillai PB, Huff WE, Huff GR, Horst RL, Emmert JL, 2007. Evaluation of the efficacy of vitamin D3 or its metabolites on thiram-induced tibial dyschondroplasia in chickens. *Res Vet Sci.* 2007 Feb 16 (Eupub).
12. Rath, NC, W. E. Huff, G. R. Huff, **L. Kannan.**, 2007. Induction of Tibial Dyschondroplasia by carbamate and thiocarbamate pesticides. *Avian Dis.* 51:590-593.
13. **Morsy, M.R.**, L. Jouve, J.F. Hausman, L. Hoffmann and J.McD. Stewart. 2007. Oxidative and carbohydrate metabolism as abiotic stress tolerance traits in two rice (*Oryza sativa* L.) genotypes differing in chilling tolerance. *J. Plant Physiology* 164:157-167.
14. **Morsy, M.R.** and J. McD. Stewart. 2007. *Os1ti6a* protein-protein interaction is not detected by the Gal4 yeast two-hybrid system. In: R.J. Norman and K.A.K. Moldenhauer (eds.) Wells Rice Research Reports. AR Agric. Exp. Sta. Research Series. (in press)
15. **Morsy, M.R.** and J. McD. Stewart. 2007. Functional characterization of *Os1ti6a* using yeast heterologous expression. In: R.J. Norman and K.A.K. Moldenhauer (eds.) Wells Rice Research Reports. AR Agric. Exp. Sta. Research Series. (In press)
16. **Morsy, M.R.**, B.G. de los Reyes and J.McD. Stewart. Expression profiling of two rice (*Oryza sativa*) genotypes differing in chilling tolerance using cDNA-AFLP. *The Plant Genome.* (Submitted)
17. **Zhang, B.**, N. Hetttiarachychy, P.Chen, R. Horax, B. Cornelious, and D. Zhu. 2006. Influence of the application of three different elicitors on soybean plants on the

concentrations of several isoflavones in soybean seed. J. Agric. Food. Chem. 54:5548-5554.

18. Srivastava V, **Nicholson SJ** (2006) Cre/ lox technologies for plant transformation. CAB Reviews: Perspectives in Agriculture, Veterinary Science, Nutrition and Natural Resources 2006 1, No. 034.
19. **Kanta, H.**, L. Laprade, **A. Almutairi** and I. Pinto, 2006. Suppressor analysis of a histone defect identifies a new function for the Hda1 complex in chromosome segregation. Genetics 173:435-450.
20. **Cao, C.**, Liu, Y. and Lehmann, M. (2007). Fork head controls the timing and tissue selectivity of steroid-induced developmental cell death. J. Cell Biol. 176, 843-852.
21. W. Dong, T. Zhang, M. McDonald, **C. Padilla**, J. Epstein, Z. R. Tian, 2006. Biocompatible nanofiber scaffolds on metal for controlled release & cell colonization, *Nanomedicine: Nanotech., Biology, & Medicine*, 2, 248.

#### 4) Presentations at national or international meetings by CEMB students

1. **Naomi Marty**: The Role of a Structural Switch Mechanism in Membrane Binding by the Signal Recognition Particle Receptor in Post-Translational Targeting. Gordon Conference June 2007.
2. **Anna E. Daily, Johanna M. Froyd-Rankenber**, Denise V. Greathouse, Roger E. Koeppe, 2<sup>nd</sup> (2007) Biophysical Society 51<sup>st</sup> Annual Meeting, Baltimore, MD. Abstract 309. Orientations of anchored membrane-spanning peptides deduced from 2H NMR spectra using the GALA Method.
3. **Christopher L. Mazzanti**, Jennifer Diaz, James F. Hinton, Roger E. Koeppe, II (2007) Biophysical Society 51<sup>st</sup> Annual Meeting, Baltimore, MD. Abstract 316. Lipid Interactions of the Transmembrane Domain of Anthrax Toxin Receptor.
4. **Anna E. Daily**, Denise V. Greathouse, Patrick C. A. van der Wel, Roger E. Koeppe II. (2007) Biophysical Society 51<sup>st</sup> Annual Meeting, Baltimore, MD. Abstract 326. Intrinsic Kinking of Transmembrane alpha-Helical Peptides as a Function of Hydrophobic Mismatch.
5. Andrea Holt, Thomas K. M. Nyholm, Dirk T. S. Rijkers, **Anna Daily**, Roger E. Koeppe II, J. Antoinette Killian (2007) Biophysical Society 51<sup>st</sup> Annual Meeting, Baltimore, MD. Abstract 2051. Is There a Special Interaction Between Cholesterol and Tryptophan?
6. **B Flack**, and DD Rhoads. Cloning And Analysis Of The Chicken DAZL (Deleted In Azoospermia-Like) Promoter As A Marker For Primordial Germ Cell Development. Plant and Animal Genome, San Deigo, CA, Jan. 2007.
7. **Kim, J. N.**, G.W. Youm, Y.M. Kwon. 2006. Identification of *Salmonella enteritidis* Genes Essential for *in vitro* Growth by TnAraOut Mutagenesis. Poultry Science Association, Edmonton, Canada.
8. **Hansen, C. R.** and Y.M. Kwon. 2006. Novel method for rapid construction of *Campylobacter jejuni* deletion mutants. Poultry Science Association, Edmonton, Canada.
9. J.-W. Kim, **N. Kotagiri**, R. Deaton, and S. Tung. 2007. DNA-Directed Self-Assembly of Microscopic 1-D Carbon Nanotube Wire. IEEE International Conference on Nano/Micro Engineered and Molecular Systems (IEEE-NEMS), Bangkok, Thailand.

10. J.-W. Kim, R. Deaton, and **N. Kotagiri**. 2007. Scale Integration of Carbon Nanotube Through Controlled Interfacing and DNA-Guided Self-Assembly. DNA 13: 13<sup>th</sup> International Meeting on DNA Computing, Memphis, Tennessee.
11. J.-W. Kim, **J.S. Lee**, and R. Deaton. 2007. Non-Crosshybridizing Oligonucleotide Building Blocks for Accurate, Scalable, and High-Rate Nanofabrication. IEEE International Conference on Nano/Micro Engineered and Molecular Systems (IEEE-NEMS), Bangkok, Thailand.
12. J.-W. Kim, R. Deaton, J. Chen, and **J.S. Lee**. 2006. Genomic Pattern Classifier Based on a Biological Memory with *In Vitro* Learning and Associative Recall. DNA 12: 12<sup>th</sup> International Meeting on DNA Computing, Seoul, Korea.
13. J.-W. Kim, R. Deaton, **J.S. Lee**, and **H.D. Wijesekera**. 2006. *In Vitro* Selection for Large Libraries of Non-Crosshybridizing DNA Oligonucleotides for DNA Computing and DNA-Based Nanotechnology. Institute of Biological Engineering (IBE) Annual Meeting, Tucson, AZ.
14. **N. Kotagiri** and J.-W. Kim. 2006. Modeling of Hybridization kinetics of DNA-CNT Adducts in Solution. Institute of Biological Engineering (IBE) Annual Meeting, Tucson, AZ.
15. J.-W. Kim, **J.S. Lee**, and R. Deaton. 2006. A Biological Memory with *In Vitro* Learning and Associative Recall as a Genomic Pattern Classifier. Institute of Biological Engineering (IBE) Annual Meeting, Tucson, AZ.
16. **L. Kannan**, and N Rath. Oral Presentation at **Poultry Science Association** in July 2006.
17. **L. Kannan**, and N Rath. Poster Presentation at **INBRE**, University of Arkansas in November 2006.
18. **L. Kannan**, and N Rath. Poster Presentation at “**First International Symposium on Thymosin**” in March 2007
19. **L. Kannan**, and N Rath. Poster Presentation at **Poultry Science Association** in July 2007. (Forthcoming)
20. Jeannine M. Durdik and **Jill E. Hesse**. VDJ recombination in old thymocytes. Asilomar, the 45th Mid-Winter Conference of Immunologists, Pacific Grove, CA Jan 28-31, 2007.
21. **Jill Hesse**, **Matthew Faulkner** and Jeannine Durdik. Enumeration of double stranded breaks in developing thymocytes in young and aging mice. American Association of Immunologists 2007, South Beach Miami, FL May 18-22, 2007.
22. **B. Zhang**, J. Berger, M. Tamura, and P. Chen. 2006 ASA-CSSA-SSSA International Annual meeting. Soybean Seed Hardness Determination and Its Association with Other Physical Properties.
23. **B. Zhang**, P. Chen, S., Palacios, and S. Zhu. 2006 ASA-CSSA-SSSA International Annual meeting. Genetic Analysis of Quantitative Trait Loci Related to Seed Hardness in Specialty Soybean.
24. **B. Zhang** and P. Chen. 2006 Cellular and Molecular Biology of the Soybean Conference. Genetic Diversity and Quality Attributes of Food-Grade Soybeans from North America and Asia.
25. **Plumlee, B. L.**, X. Wang, and G. F. Erf. 2006. Interferon-gamma expression in feathers from vitiliginous Smyth line chickens. J. Immunology 176:S283.
26. **Plumlee, B. L.**, and **G. F. Erf**. 2006. Differential cytokine expression in feathers from vitiliginous Smyth line chickens. Pigment Cell Res.19:371.



27. **Tinsley, N. B.**, K. Lassiter, and G. F. Erf. 2006. Protein expression by melanocytes derived from autoimmune vitiligo-prone Smyth line and control chickens. *Pigment Cell Res.* 19:375.
28. **Plumlee, B. L.**, and G. F. Erf. 2006. Differential cytokine expression in feathers during active autoimmune Smyth line vitiligo. Avian Immunology Research Group Meeting, Paris, France, October 21-24.
29. **Nicholson SJ**, Chawla R, Srivastava V. Gene targeting construct induces strong silencing of phyA locus . Annual Conference of American Society of Plant Biologists, Aug 8-12, 2006 Boston MA.
30. **Nicholson SJ**, Srivastava V. Transgene induced transcriptional silencing of Arabidopsis PhyA gene. 18th International conference on Arabidopsis Research. June 20-23, 2007, Beijing China
31. Hamal, K. R., R. F. Wideman, Jr., **B. L. Plumlee**, and G. F. Erf. 2006. Time-course of expression of inducible nitric oxide synthase in lungs following intravenous cellulose microparticle injection in three broiler lines. *Poult. Sci.* 85 (Suppl.1):37.
32. Erf, G. F., B. Lockhart, O. T. Bowen, **K. Bateman**, and R. Finley. 2007. Using the chicken feather as a window into cell-mediated tissue responses. *J. Immunol.* 178:99.12
33. Higgins, S. E., S. L. Layton, A. D. Wolfenden, **K. Cole**, B. M. Hargis, and G. F. Erf. 2007. *In vivo* characterization of the recall response to antigen in chickens vaccinated with attenuated *Salmonella* mutants expressing M2e protein. *Poult. Sci.* (in press).
34. Erf, G. F., B. Lockhart, **K. Bateman**, R. Finley, and O.T. Bowen. The feather as an in vivo test tube for tissue immune responses. *Poult. Sci.* (in press)
35. Erf, G. F., **B. L. Plumlee**, **K. D. Bateman**, C. T. Trovillion, and R. C. Finley. 2007. Examination of early events in the development of autoimmune vitiligo in the Smyth line chicken model. *Pigment Cell Res.* (in press).
36. **Almutairi A.**, Williamson,W., Rhoads,M. and I. Pinto. 2006. Involvement of the Hda1 deacetylase complex in centromere structure and function. Yeast Genetics and Molecular Biology Meeting, Princeton, N.J.
37. **Danforth R.** and I. Pinto. 2006. Understanding histone function on chromosome segregation. Yeast Genetics and Molecular Biology Meeting, Princeton, N.J.
38. de Banzie, J. S., **Cao, C.**, and Lehmann, M.: A Fork Head Binding Site Cluster from the Head Involution Defective Gene of *Drosophila melanogaster* Does Not Function as a General Silencer. Oklahoma Research Day, University of Central Oklahoma, Edmond, Oklahoma, April 6, 2007.
39. **Cao, C.**, Liu, Y., and Lehmann, M.: Fork head controls the tissue selectivity of steroid-induced developmental cell death. 48th Annual *Drosophila* Research Conference, Philadelphia, PA, USA, March 7 - 11, 2007.
40. Lehmann, M., **Cao, C.**, and Liu, Y.: Fork head controls the timing and tissue selectivity of steroid-induced developmental cell death. Ecdysone Workshop, Philadelphia, PA, March 7, 2007.
41. Lehmann, M., **Cao, C.**, and Liu, Y.: Fork head controls the timing and tissue selectivity of steroid-induced developmental cell death. Cell Death Workshop, Philadelphia, PA, March 9, 2007.

## 5) Job placement for CEMB graduates

**Carol-Ojano Dirain** took a position (May 21, 2007) as a Postdoctoral Scientist at the University of Florida, School of Medicine. She is working with Dr. Peter Stacpoole in the general area of mitochondrial diseases. She has two initial roles which will be to assist in development and testing; 1) an animal model of pyruvate dehydrogenase deficiency (gene knockout model) and, 2) pharmacological and/or gene transfer strategies for PDH deficiency and cancer. These studies will involve collaborations with other UF faculty and will require small animal work and the application of diverse histological, cell and molecular biology techniques.

**Mustafa Morsy** completed 2 years post-doc position with Dr. John Cushman at the University of Nevada, Reno and moved to a post-doc position at the Noble Foundation, Ardmore, OK in Mar., 2007.

**Wesner Antoine** is nearing the end of 2+ years in a post-doc position with Dr. Jan Miernyk at the University of Missouri, Columbia. He is currently looking for a post-doc position in Australia or Canada, otherwise he will temporarily return to Haite (because of US Visa status).

**Tuan M. Huynh**, M.D. M.S., Ho Chi Minh City University of Medicine and Pharmacy, Infectious Diseases Unit

**Bo Zhang** started to work as a postdoctoral research associate in the Dept. of Crop, Soil, and Environmental Sciences, Univ. of Arkansas in Jan. 1, 2007. She is working with Dr. Pengyin Chen on soybean breeding and molecular genetics. She is primarily involved in marker assisted breeding for improving soy-food quality traits such as sugar, hardness, calcium, phytate, fatty acid, and isoflavones. Her research will help understand the genetics of important seed quality traits and accelerate the process of breeding specialty soybeans for the soyfood market.

**Nicholas Tinsley** (MS defense passed, final changes on thesis in process) now in Pharmacy School at UAMS.

**Chike Cao** (MS Spring 2007) is now a Research Assistant at the Department of Pharmacology, Vanderbilt University Medical Center, Nashville, Tennessee.

### **Office for the Studies on Aging Graduate Certificate in Gerontology**

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

The Office has been particularly successful in fundraising and research support this year. Co-directors, Ro Di Brezzo and Barbara Shadden received funding from the Arkansas Biosciences Institute to continue their caregiver health initiative as well as an award from the Women's Giving Circle to provide valuable information about health to local caregivers. A proposal submitted to the NIH AREA program has received a favorable funding score. The Office also received two generous donations from long-time supporters, Bob and Louise Garnett.

In addition, the Office has graduated its first students from the Graduate Certificate in Gerontology program and enrollment in the certificate program continues to increase.

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 2<sup>nd</sup> Annual Aging Well Creative Writing Award Recipients on December 5, 2006
  - 1<sup>st</sup> prize: *Standing Eight*, Kevin Brown
  - 2<sup>nd</sup> prize: *Hands, Evenness, Great Falls*, Matthew Goldberg
  - 3<sup>rd</sup> prize: *I Imagine Growing Old with You*, Cat Donnelly
- Continuation of the first Distinguished Doctoral Fellowship in Gerontology (First Awarded, August 2003).
- Continuing to publish, *Across the Ages*, a bi-annual newsletter for faculty, staff, student and community partners. (Fall 2006 & Spring 2007)
- Co-hosted campus workshop, *Innovative Programs for People with Memory Loss*, with Sigma Phi Omega and the Associated Student Government. The workshop was led by Linda Buettner, PhD, CTRS, from Florida Gulf Coast University. Twenty professionals from the community and 17 students attended the day-long workshop (October 2006).
- Attended various community gerontology receptions, lectures and programs.

#### *Development Efforts:*

- The Office for Studies on Aging received \$10,500 from the Women's Giving Circle for the proposal entitled *Meeting the Health Needs of Family Caregivers*. This project will include a series of workshops for caregivers about physical and mental health topics (April 2007).
- The Office for Studies on Aging received a second \$5,000 donation from Mr. & Mrs. Bob Garnett (December 2006). \$2000 of this donation is to be used for the 3<sup>rd</sup> Annual Aging Well Writing Contest to be held in Fall 2007.
- The Office for Studies on Aging received a \$5,000 donation from Mr. & Mrs. Bob Garnett (Summer 2006). \$2000 of this donation was used for the Aging Well Creative Writing Award.

#### *Grants:*

- Shadden, B.B., Di Brezzo, R., & Ganster, D. (under review). *Salivary Cortisol Response to Managing Dual Roles of Work and Caregiving*, National Institutes on Aging (R15). \$150,000. This proposal received a priority score of 145. The Program Contact for the Behavioral and Social Research Program at the National Institute on Aging has recommended that the proposal be resubmitted for the June 25, 2007 submission deadline.

- Di Brezzo, R., & Shadden, B.B. (2006). Salivary Cortisol as a Biomarker of the Stress of Managing Employment and Caregiving, Arkansas BioSciences Institute. \$30,000.

#### *Gerontology Certificate:*

- Meighan Acuff Pendergrass and Cath McMahan have become the first students to complete the Graduate Certificate in Gerontology. Meighan, M.S. in Exercise Science, is an Exercise Instructor at the U of A-Fort Smith. Cathi McMahan is currently completing her dissertation on leisure education for caregivers and plan to graduate in May 2007 with a Ph.D. in Rehabilitation Education. She is an Assistant Professor in the Department of Parks, Recreation, and Hospitality Administration at Arkansas Tech University.
- The Critical Issues in Aging course (GERO 5023) was offered for the first time in the summer of 2006. Seven students (3 in the GERO certificate program) were enrolled under instructor Barbara Shadden, OSA Co-Director and GERO Certificate faculty.
- One meeting of the GERO Certificate Steering Committee was called this year.
- The OSA maintains membership in the Association for Gerontology in Higher Education (AGHE), the only national organization devoted primarily to gerontology education.

#### *Student Services:*

- The OSA continues to provide office space to the delta sigma chapter of Sigma Phi Omega, the national academic honor and professional society in gerontology, at the University of Arkansas.
- Two Exercise Science students worked through the Office to conduct exercise programs in area senior centers. Kelly Williams provided fitness consultation at the Fayetteville Senior Activity Center, while Matt Griswold conducted an exercise class at the Springdale Senior Activity Center.
- The Office for Studies on Aging sponsored Careers in Aging week (April 9 – 13) at the UA campus. Activities included a viewing of the documentary film, *Mind Games*, an OSA open house, and presentations about careers working with older adults.

#### *Abstracts:*

- Powers, M., Di Brezzo, R., Shadden, B.B., & Gray, M. (2006). The impact of three modes of exercise on perceived health status, *The Gerontologist*, 46 (Special Issue 1), 446.

#### *Presentations:*

- Acuff, M., Gray, M., & Powers, M. (October 6, 2006). *Group Exercise to Promote Health and Fitness of Retired Faculty*. Concurrent session at the Annual Conference of SAWPASH, Inc, Fayetteville, Arkansas.

This year, the Office for Studies on Aging has actively worked to increase the opportunities for students to study gerontology and aging studies at the UofA. In addition, the OSA continues to effectively address the need to connect currently fragmented resources in services to older adults, by collaborating with other UA researchers on aging and providing educational opportunities for students in the community.

In order to continue to meet its mission and to grow enrollment in Gerontology programs, the Office continues to need operational support for Co-Directors time (or hiring of additional personnel) to pursue the agenda of the Office. The potential for the Office for the Studies on Aging is enormous, as witnessed by the overwhelming response of the campus and community. A continued university commitment to this Office would enhance capabilities for delivering services and increase the likelihood of securing external funding.

## **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 client BioBased Technologies, the Research and Development arm of the BioBased companies.

## **University of Arkansas Press**

Annual sales for the University of Arkansas Press finished strong – up 7 % over fiscal year 2006. In spite of higher than normal industry-wide returns in the last quarter, revenues were healthy in June. Year-end sales exceeded \$600,000 for the first time (other than a year for the new edition of the Arkansas History text). The year started especially well with 17 titles bringing over \$1,000 each in August. These titles came from across the entire list: front list, backlist, new editions, trade books, classroom books, etc. This is to be considered as a solid validation of the strength of the entire publishing program.

Returns of University Arkansas Press publications remain consistent with industry averages. UA Press expenses were constant in actual dollars and, obviously, down as a percentage of (improved) sales.

Marketing and acquisition staff development continues to improve, thereby adding professional strength and productivity in those areas. The Press is still in need of additional staff in acquisitions to handle the increased number of manuscripts we are bringing in (see increase in sales.)

Among the prizes and awards won by UA Press publications in fiscal year 2007 were:

- *Let Me Tell You Where I've Been*  
ForeWord Magazine 2006 Book of the Year bronze award, Anthologies
- *Fire Baton*  
ForeWord Magazine 2006 Book of the Year finalist, poetry
- *Fire Baton*  
The Library of Virginia 2007 Literary Awards, finalist, poetry
- *First Inhabitants of Arcadia*  
Winner of the 2006 Paterson Poetry Prize  
Winner of the 2006 Binghamton University Milt Kessler Book Award

- *Promises Kept*  
2006 Booker-Worthen Prize

After a ten-year hiatus, the *Portraits of Conflict* series was resumed with *Portraits of Conflict: A Photographic History of Tennessee in the Civil War*. This book was featured in a first-ever Civil War direct mail sales campaign which generated \$50,000 in new sales. The campaign is still generating revenue after several months.

The University of Arkansas Press continues to grow in reputation as a publisher of noteworthy books in the state, the region and in the larger world of university presses across the country.

**The Center for Mathematics and Science Education  
Eisenhower National Clearinghouse Access Center  
NASA Educator Resource Center**

The Center for Mathematics and Science Education (CMASE) is located in the West Avenue Annex and supported through the University of Arkansas Graduate School. This center is an outgrowth of the University of Arkansas Science Education Liaison Office begun fifteen years ago as a K-12 science education outreach facility for the University. Currently, CMASE is one of twelve science, mathematics and technology education centers working in conjunction with the Arkansas Department of Higher Education (ADHE) and the Arkansas Department of Education (ADE) as a professional development network of mathematics and science centers on university and college campuses around the state.

The main objectives of the center continue to be 1) to assist the University of Arkansas in K-16+ education outreach, 2) to coordinate University of Arkansas participation in state K-16 science and mathematics proposal initiatives, 3) to provide regionally beneficial grant-funded programs for K-16+ education, 4) to provide access points for dissemination of educational materials, resources and information, and 5) to link the University of Arkansas with common education allies throughout the state and nation.

Through CMASE, annual University-sponsored activities such as University Day, the Northwest Arkansas Regional Science and Engineering Fair, Springfest, and various teacher and student programs are still top priority. Day-to-day educational outreach information continues to be sent to local, regional, and state education entities through email listservs, web page information, and regular mail. Grant writing, specifically for Center outreach activities, continues and, as needed, is provided to other departments and colleges requesting assistance for pertinent grants. The maintenance of the University of Arkansas K-16+ Outreach program is the first layer of responsibility for CMASE.

The second layer of CMASE is as the Arkansas National Aeronautics and Space Administration Educator Resource Center (NASA ERC). As the only Arkansas NASA ERC, CMASE is responsible for warehousing and disseminating NASA materials provided by NASA HQ in Washington, D.C. and NASA Marshall Space Flight Center in Huntsville, Alabama, to the state's educators. In general, all state NASA ERCs are responsible for providing regular updates on NASA programs and materials in the context of email, webpage, and workshop information

distribution. Educational materials and information are supplied to CMASE/NASA for local, regional, and statewide dissemination to Arkansas teachers through mail and workshop presentations. Webpages, specifically created for the Arkansas NASA ERC, provide a database of all materials and information available for statewide educator access.

The third layer of CMASE is as one of seven partners in the Arkansas Discovery Network (ADN) that provides connectivity with partnering museums and informal science education around the state. The Donald W. Reynolds Foundation funded a five-year, \$7.4 million grant to bring museum quality exhibits to rural schools around the state in the form of traveling museum exhibits, presentations, and a 40ft interactive travel van. CMASE is the northwest Arkansas partner and will act as the northwest coordinator for the ADN partnership's education outreach.

Within the past year, CMASE has had the following grants funded:

- ADE: Math Instruction Specialist \$ 84,500
- ADHE: Elementary Science Specialist \$ 168,000 (year 3 of 3)
- ADE: Science Instruction Specialist \$ 84,500
- Arkansas Science and Technology Authority \$ 10,700
- EPA: WATERS \$ 20,763
- NCLB: ADHE Teacher Enhancement \$ 88,733
- NASA: State Educator Resource Center \$ In kind
- Reynolds Foundation: Discovery Network \$7,400,000 (year 2 of 5)

During the past year, the CMASE director, mathematics specialist, and science specialist have, to list only the major components, provided science/mathematics/technology content professional development to:

- 2885 In-Service Teachers - 148 workshops (6 hours/day)
- 987 Pre-Service Teachers - 47 ½-day classes and workshop sessions (2-3 hours/session) where student teachers were served from UA, UAFS, JBU, and NWACC

Because teachers influence from 30 to 150 students per day within their classes, the number of students impacted by these education outreach opportunities, if properly estimated, would literally be in the 10s of thousands of students who benefit from teacher to classroom implementation through CMASE activities.

Regional K-12 (informal/formal education community) activities

- University Days: 925 students and teachers
- Northwest Arkansas Regional Science and Engineering Fair: 1400+ students, parents and teachers
- Springfest: 1500+ children and general public
- Grossology (ADN traveling exhibit): 9409 students, teachers, and general public
- Bubbleology (ADN presentations): 3698 students, teachers, and general public
- 5 ½ day sessions for Fayetteville Library Super Science: 175 2<sup>nd</sup>-6<sup>th</sup> grade students/parents
- 10 STARLAB (traveling portable planetarium) sessions: 300 teachers and students

TOTAL: 18,407 directly served within the K-12 informal education community

The director and specialists were involved in 294 total days of regional, state, and national travel. Of these, 129 involved regional meetings with UA faculty, area Education Service Cooperative members, school representatives, and other regional outreach educators. Ninety-six days involved instate (out of the northwest region) meetings dealing with the annual Arkansas Curriculum Conference state teachers' conference, the Arkansas Discovery Network, the Network of Math and Science Centers directors, math/science specialists' statewide planning, ADHE/ADE professional development, and other various statewide professional development programs/projects. The remaining sixty-nine days of travel were spent attending out-of-state meetings and conferences giving invited presentations/workshops. These presentations were given at NASA conferences, the International Space Station Educators' Conference, the National Science Teachers Association annual national conference, the National Council for Teachers of Mathematics annual national conference, and the GLOBE international conference.

Records are also kept for those who visit the Center. During the past year, approximately 1,045 have registered as on-site visitors in order to obtain information and resources from CMASE/NASA. An estimated 200K (yes, that is thousands) email contacts were sent through personal communication & listserv mailings and 7,330 pieces of education materials such as teacher guides, posters, and lithographs were distributed.

Another important part of CMASE is interaction with faculty in creating proposals, working with ARSC and COEHP students, and UA "general education outreach" business. This interaction occurs weekly to monthly and is not listed within the overall categories of activity.

During the past year, the CMASE director has served (continues to serve) as:

- 1) Conference Chair the annual state teachers conference held in Little Rock
- 2) Secretary on the Northwest Arkansas Museum Board
- 3) Nationally-elected Board member to the Triangle Coalition in Washington, DC.

Within the past month, CMASE problems with office and storage space have been resolved. Deconstruction/reconstruction on the WAAX building has been completed. Two additional rooms on the second floor of the facility have been authorized for use by CMASE: one for storage and one for computer lab and classroom teaching. This will allow concurrent teaching during the year as various departments and centers need space for CMASE-related classes. It will especially be useful in organization of the ever growing materials and resources available at the center for teacher and faculty use.

During the 2006-2007 school year, the COEHP held regularly scheduled classes at CMASE because of the availability of technology and K-12 materials. The Center is again being made available to the COEHP for the 2007-2008 school year. This partnership showcases what CMASE has to offer student teachers/faculty and provides COEHP with hands-on materials and resources not readily available on campus.

Future Plans are to continue to provide:

- a) On-campus science, mathematics and technology outreach programs for undergraduate and graduate education majors;



- b) College of Education and Health Professions pre-service teacher workshops and opportunities for UA students to become more involved with education outreach;
- c) Education outreach for K-16+ science, mathematics and technology teachers and student;
- d) Grant funded professional development sessions, workshops and institutes for K-16+ teachers;
- e) Science, mathematics and technology materials and resources to K-16+ teachers;
- f) Education listserv and web page mentoring to local, regional and state education networks.

## **Testing Services**

### *Executive Summary*

The mission of Testing Services is to promote and maintain an atmosphere conducive to providing a constructive testing environment when administering standardized tests. Further, it is to consistently strive to assist and provide accommodations needed for individual and group settings when administering placement, proficiency, undergraduate and graduate admissions, degree credit by examination, and certification tests. Testing Services provides exceptional, accessible and comprehensive testing services to all to guide and facilitate learning and support the achievement of their professional and personal educational goals. The office provides a welcoming and supportive atmosphere that promotes and supports the educational endeavors of all students and prospective students.

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, MAT and SLPT. An example of exemption tests is the Advanced Composition Exemption Exam. Placement assessments like the Math and Reading Placement Tests, Grammar, Spelling and Punctuation (GSP), 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 2006-07 Academic Year approximately 12,000 students and prospective students who were satisfying admission/degree requirements at UA and other institutions were tested. Considering the University's goal of significantly increasing the student body by the year 2010, the demand for testing will grow, and the gap between testing that is needed and testing that can be provided will be even greater.

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 481 tests were administered: 105 sessions administered Saturdays, 22 administered late afternoon or evening hours, and 13 sessions administered Sundays.

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 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 118 individuals for such tests.

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 2006-2007 Academic Year, 23 examinees with documented disabilities requested and received non-standard testing accommodations.

Demand for testing services is highest between October and April. (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 testing room containing only 15 computers and paper-based testing seating 45 examinees. To support large state and national test administrations, tests are administered on Saturdays and Sundays in other buildings across campus. This year a total of 13 tests were administered on Sundays. Classrooms in Kimpel Hall and computer labs in the Walton College of Business are used to support the large numbers of students who are required to test during peak times.

To support enrollment growth, the needs of academic departments and supplement the office budget, Testing Services continues to expand services. An example of these additions is the Advanced Composition Exemption Test this year which is administered six weeks after the semester begins. Also, another new test this year is the Grammar, Spelling and Punctuation (GSP) Exam which is administered to students majoring in Journalism. Testing Services operates with funding generated from a variety of testing services offered to the campus community and area residents such as the GSP.

### *New Initiatives*

During the past year, many changes took place in administration formats of the existing computer-based testing programs, especially the Test of English as a Foreign Language (TOEFL) and the Graduate Management Admission Test (GMAT). Not only has Testing Services adapted to all the changes that took place this year, but the office has added new exams while accommodating the campus community. Included in this category are the COMPASS, Advanced Composition Exemption and the Grammar, Spelling and Punctuation Exams which took place this year.

COMPASS is an ACT-developed advising, course placement, and retention tool which will be used specifically to assess non-traditional students' skills. Based on the suggestion of the Vice Provost, Dr. Nancy Talburt, and Northwest Arkansas Community College's Dr. Karen Hodges, Testing Services began scheduling and administering the reading part of the COMPASS during the New Student Orientation in the summer of 2006. At this point the reading portion is used only during the New Student Orientation and will be given as the Developmental Reading Test to those individuals required to take the Reading 0003, but will be administered on a regular

basis beginning summer 2007. The reading portion of the test will provide students with another opportunity for exemption from this class. A \$25.00 test fee was approved and will be charged to students to partially off set the cost of registration, test administration staff and score reporting.

Testing Services administered the Advanced Composition Exemption Exam at the request of Dr. David Joliffe and Dr. Pat Slattery of the English Department beginning fall of 2006. Testing Services became responsible for scheduling the necessary test dates, posting information on the website, registering students, test administration, and coordinating essay readers/evaluators who are notified in advance of the test date, evaluation time and location. A \$20.00 test fee was approved and was charged to students to partially off set the cost to Testing Services for staff honoraria, readers' fees and those who helped with score reporting. RazorTemps temporary employees were hired and used to help with prompt reporting of the scores. Additional revenue was created for Testing Services through administering this exam.

Beginning March 2007 Testing Services started administering the Grammar, Spelling and Punctuation Exam (GSP) for the Journalism. The proposal to administer this test was written by the director of Testing Services and was submitted to the department in the summer of 2006. The GSP helps to determine whether students have sufficient command of English basics to succeed in the curriculum and in professional writing careers. The GSP consists of 60 multiple-choice questions in the three areas: 20 in grammar, 20 in spelling and 20 in punctuation. To pass the test, students must score 75 percent or higher on all three sections of the test. If they do not pass all three sections, they must retake the individual sections. The test is 90 minutes in length and 30 minutes per section when retaking a section.

Beginning this fall, all journalism students must pass the GSP before they are allowed to enroll in Fundamentals of Journalism (JOUR 1033), a course that is pre-requisite to all writing courses in the Journalism Department. The first few exams were given in spring 2007 shortly before pre-registration for fall classes begun. A \$45.00 test fee was approved and was charged to students to partially off set the cost of registration, copying, testing staff, scanning answer sheets and reporting test results. The charges will decrease to \$30.00 starting fall 2007 based on the request of the Journalism Department. Additional income was generated for the office through this exam.

Another new test added this year is the Fundamentals of Engineering (FE) Exam which is given through the National Council of Examiners for Engineering and Surveying (NCEES). Beginning April 20, 2007, Testing Services started administering this exam to the College of Engineering students. The request for Testing Services to oversee this exam came from the Associate Dean of the college, Dr. Terry Martin. The proposal was written by the director of Testing Services, was submitted to the college in the summer of 2006 and was approved then.

The FE Exam is an 8-hour exam administered on Saturday and is given the same day in two separate 4-hour sessions – morning and afternoon. The morning session, which is common to all disciplines, contains 120 one-point questions. The afternoon session is administered in seven disciplines – Chemical, Civil, Electrical, Environmental, General, Industrial, and Mechanical.

The afternoon session contains 60 two-point questions per subject-matter area. This exam is entirely multiple-choice and is administered twice a year in April and October.

Due to the large volume of students who take the Nursing Department exams each semester, Testing Services schedules and administers a series of exams in the Walton College of Business computer lab. Students are normally scheduled for specific tests once a class roster is received from College of Education Nursing Department. Testing Services activates each exam for the individual student and their testing day and time restriction window. The computer lab is equipped with approximately 75 computers that are used for this test. On a regular basis, students complain about the heat in this room, as there is not adequate ventilation in this lab. A suggestion was made by testing staff to upgrade the cooling system to accommodate the large number of computers and large volume of test-takers. In the interim period, Facilities Management has agreed to provide a high capacity water cooler to help offset the heat to reduce the number of complaints and to make the testing experiences more pleasant for the Nursing students.

Over the past years, Testing Services has generated ideas to increase funding for the office by advertising individual test administration/distance learning as an option. 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, Testing Services will arrange an individual administration. An individual administration is any test administration that's purposely given to an individual in a standard manner. These tests are administered per student request at a time mutually convenient for both the student and testing schedule.

With the hard work of the office staff posting this information on Testing Services' website, the results have been successful and additional revenue was generated. During this fiscal year 118 such tests were administered.

### *Specific Accomplishments*

#### Collaborating with UA departments

- Collaboration with the College of Engineering to start administering the Fundamentals of Engineering Exam to their students.
- Collaboration with the Registrar's Office to identify eligible Advanced Composition (AC) students.
- Collaboration with the Registrar's Office to automate the registration process for the AC Exam beginning with June 13<sup>th</sup> exam.
- Collaboration with the New Student Office by scheduling and administering the Developmental Reading Placement and Math Placement Tests with each orientation session.
- Collaboration with the Registrar's Office to identify eligible AAGE students.
- Collaboration with deans, academic advisors and major professors to inform students of their eligibility & register to take the Advanced Composition Exemption Exam for the fall and spring of 2006-2007.
- Collaboration with deans, academic advisors and major professors to inform students of their eligibility to take the state-mandated AAGE Exam.

- Cooperation and collaboration with different departments on campus to receive SLPT topics for students who are interested in obtaining a teaching assistantship.
- Collaboration with the Graduate Studies Department of Walton College of Business in regard to the new GMAT contract and test administration at UA.
- Collaboration with the Office of Admissions to streamline joint processes regarding admission tests and referrals to Testing Services.
- Collaboration with the College of Education Nursing Department to schedule and administer a series of nursing exams to their students each semester.
- 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 Students Office by providing them with CLEP brochures and an information sheet to be included in student orientation packets.
- Collaboration with the Office of Study Abroad to accurately identify AAGE students in their program who will be taking the state-mandated test.
- Collaboration with the Center for Students with Disabilities by reinforcing testing companies' deadlines and providing time for review and follow-up correspondence with regard to students with special needs.
- Organizing and scheduling all institutional tests to accommodate the needs of different departments on campus.
- Continual training of office staff in the new information system updating students' record with regard to the AAGE.

#### Collaborating with Other Partners in Education

- Collaboration with Northwest Arkansas Community College to share AAGE examinee data.
- Collaboration with the Northwest Arkansas Community College to administer the new e-COMPASS test to students in the developmental math and reading courses.
- Complying with the continuing changes pertaining to the CBT tests such as TOEFL, GRE and GMAT.
- Collaboration with area high school counselors by accommodating their students with disabilities with ACT information and non-standard testing.
- Collaboration with area high school counselors to share information regarding the CLEP testing program with their students.

#### Expanding Test Program Offerings

- Implementation of e-COMPASS as an alternative to the ACT for the non-traditional students.
- Expansion of services by increasing the number of tests; the Advanced Composition Exemption Test, Grammar, Spelling and Punctuation (GSP) for the Journalism Department, Fundamentals of Engineering for the College of Engineering and COMPASS are examples of such tests.

#### Streamlining Procedures

- Development of an on-line test registration system for the Advanced Composition Exemption Exam.

- Working with UA Graduate School of Business, Graduate Management Admission Council and Pearson VUE to ensure a smooth transition to the new GMAT.
- Processing and monitoring all test registrations and issuing admission tickets.
- Working with ISIS and the Registrar's Office to ensure a sound integration of ISIS and the AAGE or Rising Junior Exam.
- Working with the ISIS team, Admission and Registrar's Offices to determine Testing Services' needs for ISIS reports and inquiries.
- Maintaining 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

- Continue to work with College of Business and Pearson VUE to get the new GMAT contract signed with terms and agreements that are beneficial to Testing Services and the administration of this exam at UA.
- Generating additional revenue for the office through new exams and ending the year with an income of over \$100,000 from this source.
- Obtaining newer computers and servers for the Computer-Based Test Center from College of Business.

#### *Ongoing Programs*

- A. Test Administration - Testing Services during FY administered 481 sessions of standardized tests 2006-07 to approximately 12,000 students. The number of students tested this year exceeds 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 (including some Sundays) are valuable in accommodating students' schedules and the University's admission requirements and orientations schedule. The GMAT was temporarily suspended by the testing company thus creating a false escrow for UA Testing Services.

- B. GRE General Test – Educational Testing Service was planning to launch the revised *Graduate Record Examinations* (GRE) General Test in the fall of 2007. The revised exam was originally scheduled to launch in October 2006. However, it was decided that the delay will better serve test takers and graduate institutions as ETS transitions from the current computer- and paper-based forms of the test to the new Internet-based (iBT) version. The following was going to change in the test delivery:

- The GRE General Test was to be administered on fixed administration dates.
- An expanded Internet-based testing network was to be available worldwide.

ETS issued a news release in April of 2007 announcing cancellation of the revised Graduate Record Examinations (GRE) General Test, which was scheduled to be

launched in September of this year. The primary reason for canceling the revised GRE General Test was access for test takers. It would not have been possible to assure complete access for all fall 2007 test takers despite the size and growth of the Internet-based Testing (iBT) network. ETS finally determined that the potential risk to testing access outweighed the benefits of immediately moving to the new format. The GRE General Test will continue to be offered worldwide in its current computer-based, continuous testing format.

The GRE General Test fees have changed and they will be effective for transactions performed beginning July 1, 2007. The fee will be \$140.00.

Other changes include new deadline for rescheduling and cancellation. GRE examinees must reschedule or cancel no later than 10 full days before their appointment (not including the day of the test or the day of the appointment). The new rescheduling fee is \$50.00. A GRE examinee who cancels an appointment by the deadline will receive a partial refund equivalent to half of the original test fee.

GRE Additional Changes: Although the following additional policy changes, also effective July 1st, do not directly impact test center procedures but they are relevant to examinees:

Fee Reduction Voucher Program: The GRE Fee Waiver Program will be replaced with a GRE Fee Reduction Program. Examinees should contact their school's financial aid office for information.

Score Reinstatement: An examinee who cancels GRE scores at the test center can have them reinstated by submitting a written request and \$30 fee to ETS within 60 days after the test date.

- C. Test of English As a Foreign Language (TOEFL) – TOEFL iBT is the newest version of ETS's English-proficiency test designed to assess English-language skills in academic settings. The new test, delivered through a secure Internet-based delivery platform, emphasizes integrated communication skills and communicative competence. Through the use of an integrated-skills approach, the test measures all four language skills and involves an advanced scoring system.
  
- D. 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 2006-2007 academic year, Testing Services tested 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 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.

- E. Graduate Management Admission Test (GMAT) Transition - Beginning January 1, 2006, the GMAT test was no longer delivered by ETS and Thomson Prometric. There were many problems associated with administering the GMAT through this new vendor and the University of Arkansas did not reach an agreement to administer the test until recently.

In the final moments of preparing this report Testing Services learned that the problems associated with the new GMAT vendor have been ironed out so Testing Services will be able to administer the test. Due to the critical need of serving the northwest Arkansas community as well as others from surrounding states, the University of Arkansas will become a Pearson VUE Center so that the GMAT could be administered here. The center will be established in July 2007 with a capacity of 6 examinees per administration.

Here is a summary of all the proposed changes that GMAC agreed upon:

- 1) Fee paid per administration of the test: GMAC understands the economics of the testing center and agreed to Pearson VUE paying the \$20 and \$10. GMAC will pay the UA the difference of \$7 per test administered and \$17 for no shows.
- 2) Administration of other Pearson-VUE tests: As an institutional test site, UA will NOT have to offer the other Pearson VUE certification tests.
- 3) Inclement weather payment policy: Pearson VUE attorneys will strike this clause so that the University will not have to compensate examinees in case the center closes.
- 4) Mixed testing: Testing Services can administer the GMAT and the GRE at the same time.
- 5) Saturdays & Evenings: Testing Services can administer the test at days and times that are convenient to University students.
- 6) 2 days/month: GMAT should be scheduled and offered at least 2 times or more per month as dictated by demand at the University.
- 7) Computer-Based Test Center: The center is not dedicated for the exclusive use of the GMAT. The server must be a dedicated server and it is provided by GMAC. The test stations can be used for other tests.
- 8) Springdale Pearson VUE – the GMAT will NOT be offered in the Springdale office.



The only requirement to be an institutional test site is to require the GMAT for admission to the University. The attorneys at Pearson VUE revised the contract and sent it back to the University's General Counsel's Office for review to be sure that the contract met the requirements for the state of Arkansas.

GMAC expedited the next steps which included delivery of the server, installation of server, software and training. Training is scheduled for July 16, 2007 and testing will begin in August 2007.

- F. Medical College Admission Test (MCAT) – The traditional paper-and-pencil format is no longer an option for students interested in taking the Medical College Admissions Test. Starting January 2007, test takers began taking the exam via computer. The change, announced by the Association of American Medical Colleges (AAMC) in 2004, was largely an administrative decision. Officials believe the new method is more efficient than the old one, which used test and essay booklets and scantrons.

As a result of the change, the MCAT will be available to students for 19 annual testing dates -- a significant increase from the two dates per year previously available. Along with more testing dates, the MCAT will also contain fewer test questions, shortening the test day to five-and-a-half hours from eight. Thomson Prometric will deliver the computer-based MCAT on behalf of the AAMC multiple times per year, at hundreds of testing sites in North America and select sites in Europe, Asia, Australia, Africa and the Middle East. Of these dates, only three are on a Saturday; all the rest are during the week with the months of May and August having a total of nine test dates.

The new computerized format allows for score reporting to be cut down to 30 days from 60 days. The AAMC hopes to reach its goal of sending students their scores in 15 days by 2008. The new format has already run into some trouble after being in use for a month. The test takers had problems with some questions on the verbal reasoning part of the exam. Thomson Prometric is the company that administers the test and provides technical support to test centers.

In June 2007, ETS acquired Prometric and it is hopeful that the University will start administering the computer-based MCAT in the near future. This is going to create a lot of extra work on the part of Testing Services to meet the testing company's hardware, software and other specifications.

- G. Millers Analogies Test – Starting September 2007, there will be a slight fee increase for MAT testing. The fee charged to the center will increase to \$50 for CBT, previously \$37, and the fee charged for paper-and-pencil will be \$50, previously \$41. Test fee charged to students will increase to \$65.00 beginning the new academic year.
- H. Pharmacy College Admission Test – The American Association of Colleges of Pharmacy (AACP) and Harcourt Assessment, Inc., have collaborated within the last few years to implement several enhancements to the *Pharmacy College Admission Test* (PCAT) intended to improve the test, and thereby improve the relevance of the scores received by pharmacy schools.

Beginning with the June 2007 administration, a revised PCAT test blueprint will be introduced, with the length of each multiple-choice subtest slightly reduced, and a second Writing subtest added to allow new Writing prompts to be field-tested with each test administration. These changes to the structure of the PCAT have extended the overall time of the test by only five minutes. The revised PCAT blueprint was reviewed and approved by the PCAT Advisory Panel in 2006. Each multiple-choice subtest includes items that are proportional in number to the test blueprint originally approved by the PCAT Advisory Panel in 1999, with the exception of Biology, which includes a greater proportion of items on genetics; and Quantitative Ability, which no longer includes any geometry items, but now includes new basic math items, a greater proportion of probability/statistics and pre-calculus items, and a smaller proportion of calculus items. The scaled score ranges and corresponding percentile ranks for the five multiple-choice subtests will remain unchanged.

In addition to the structural changes to the PCAT, another change involves the Writing score. During the first two years that the Writing subtest was an operational component of the PCAT (2005–06 and 2006–07), a single score was reported that represented the examinee's command of conventions of language. Beginning with the June 2007 test administration, Writing scores will be reported for Conventions of Language and Problem Solving on a scale of 0.0–5.0. Along with these two Writing scores, mean scores will also be reported for comparison purposes that indicate the averages of all Writing scores earned by examinees on a given test date. As with the scores reported for the other sections of the PCAT, it is especially important that pharmacy schools consider the Writing scores only in combination with other information about candidates applying for admission.

- I. Individual Test Administration – When students cannot test during a regularly scheduled test date, they may request an individual administration. This does not apply to nationally scheduled tests, but does include tests such as MAT, NOCTI, independent study, internet-based exams taken for other colleges and universities and distance learning exams. These tests are administered per student's request at a time mutually convenient for both the student and the Director of Testing Services. Students requesting these *standard* administrations are charged an individual administration fee in addition to the test fee. There were a total of 118 individual administrations this year.
- J. College Level Examination Program (CLEP) – The CLEP e-CBT exam fee will increase to \$65.00 due to increased operating expenses, beginning July 1, 2007. CLEP publications and the Web site will be updated to reflect the new exam fee. Testing Services will provide this information to candidates at the University and update Testing Services Web site and publications as well.

Of the CLEP tests administered on a regular basis, the College Board has decided to discontinue the Principles of Accounting CLEP exam.

- K. Arkansas Assessment of General Education or the Rising Junior Exam – The Act that required college juniors to take the Collegiate Assessment of Academic Proficiency was repealed recently. Senate Bill 203 which was signed into law by Governor Beebe on March 14, 2007 repealed the Rising Junior Exam and the test is no longer required to be administered in the state.

### *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.

- A. Efforts - In compliance with the university's and the testing companies' policies, 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.
- B. Goals – Promote 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.

Provide time for office staff to participate in multicultural events on campus or in the community regarding services provided to the diverse UA population.

Continue partnership with and support International Student Admission Office to increase the number of graduate and undergraduate students from an underrepresented group such as Iranian students.

Continue providing support to international students in the Spring International Language Center by providing general test preparation workshops.

Assist 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.

Assist in developing ties that boost the likelihood that prospective graduate and undergraduate applicants from Iran will enroll.

Facilitate information exchange and enhance support by connecting new Iranian faculty/staff/students and their families with others in northwest Arkansas.

Continue collaboration with all University offices regarding the diverse population and their needs, e.g., Center for Students with Disabilities, Veterans Upward Bound, etc.

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.

Maintain collaboration with Ozark Literacy Council by referring international student spouses to their ESL program.

Continue to facilitate accommodation of students with disabilities and administer tests based on their needs and the testing companies' approval.

Attend National College Testing Association (NCTA) Conference in order to increase knowledge of how to properly administer tests to a diverse population.

### *Challenges and Barriers*

**LOSS OF TESTS/INCOME:** The TOEFL changed to fixed test dates, along with the transition of the GMAT exam to a competitor's testing network, Pearson VUE, impacted the testing volumes and associated revenue generated by these tests here at the University. Testing Services established alternative sources of testing revenues to replace the lost income from the above tests.

**STAFF:** There were some changes with the office staff this year. Susana O'Daniel moved to the Secretary I position in September 2006. Due to the fact that her former position was funded by the Academic Affairs for the sole purpose of the state mandated test, AAGE, which was repealed in March of this year, Testing Services will no longer hire an individual for this position. There was no significant testing personnel changes this year.

The skills required by Testing Services' staff is not commensurate with the pay they receive; as a result, the office continues to lose staff members who were able to find higher-paying positions within or outside the University. Testing Services employs three work study students to help with the day to day operation of the office. Finding qualified and reliable students who are trainable continues to pose a challenge for the office.

**EQUIPMENT AND OFFICE FURNITURE PURCHASES:** A new computer and printer were purchased for the director of Testing Services this year to replace her computer and printer. The office also received additional used computers from Walton College of Business for the office staff, including the work study students.

New office furniture was purchased for Testing Services' main office reception area which replaced the antiquated furnishings. The old items were put in the Surplus facility at the University. This is the very first purchase for office furniture in the twenty years that the director of Testing Services has been here. No other purchases were made. Other furniture was provided to Testing Services recently from the Pre-College department here at the University.

WEBSITE MANAGEMENT: Constant updates to the testing schedule/calendar and other necessary changes made it mandatory for Testing Services to hire a qualified staff member, Jacob London, who was capable of updating site on a regular basis. Testing Services purchased a computer program for the sole purpose of managing the testing website, which is called Adobe Studio8. This web design program is a solution for creating interactive websites, applications, user interfaces, presentations, mobile device content, and other digital requirements, while keeping the website current with test dates and registration deadlines.

## 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:

- Arkansas Assessment of General Education (AAGE)\*\*
- ACT Assessment, national and residual versions
  - Advanced Composition Exemption Exam
- ASSET\*\*
- COMPASS\*
- College Level Exam Program (CLEP)\*
  - English Language Placement Test (ELPT)
- Foreign Service Written Exam (FSWE)
- Fundamentals of Engineering
- Graduate Record Exam (GRE)\*
- Graduate Record Exam (Subject)
- Grain Merchant Exam (GM)
- Grammar, Spelling & Punctuation Test (GSP)
- Law School Admission Test (LSAT)
- Miller Analogies Test (MAT)\*
- Medical College Admission Test (MCAT)
- 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\*
- School of Nursing Assessments/ERI\*
- SLPT (Spoken Language Proficiency Test)
- Test of English as a Foreign Language (TOEFL)\*
- Test of English for International Communication (TOEIC)
  - Individual test administration based on special needs (disabilities)
- Correspondence tests for students testing for other institutions
- Distance Learning Exams
- Exams for students receiving degrees from overseas institutions

\*Denotes computer-based exams  
 \*\*Was discontinued after spring 2007

## Appendix B

### Number of Examinees Tested Per Month

| Jul | Aug | Sep | Oct  | Nov | Dec | Jan | Feb  | Mar | Apr | May | Jun |
|-----|-----|-----|------|-----|-----|-----|------|-----|-----|-----|-----|
| 314 | 845 | 225 | 1436 | 920 | 968 | 863 | 2250 | 815 | 968 | 715 | 957 |

## 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. 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 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 rooms, 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 2006-2007 Academic Year.

- Students with visual impairments
- Students with hearing impairments
- Students with learning disabilities
- Students with motor disabilities
- Students with emotional disabilities

### **Vice Provost for Research**

The Vice Provost continued to serve in FY2006 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 also served on the Arkansas Space Grant and NASA EPSCoR Committees. Dr. Geren also acts as the project director for Arkansas' DEPSCoR proposal. He served on the Executive Committees of Genesis 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 2006, the Vice Provost continued his service on the Board of the Arkansas Science and Technology Authority and the Coalition Board of the Arkansas Science, Technology, Engineering, and Mathematics (STEM) Coalition.

#### *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 FY07, primarily representing the Vice Provost for Research at meetings sponsored by university consortia and funding agencies. These meetings included

- Annual Meeting of the Society of Industrial and Applied Mathematics (SIAM), Boston, Massachusetts
- EPSCoR Project Review Conference, Little Rock, Arkansas
- Sustainability Milestones Meeting, Walmart Headquarters, Bentonville, Arkansas
- UAMS Graduate School Colloquium Speaker, Little Rock, Arkansas
- NASA Space Grant Consortium Board meetings (7), Little Rock, Arkansas
- Southeastern Universities Research Association Spring Meeting, Miami, Florida
- Beaver Lake Working Group Meetings (3), various locations in Arkansas
- Teaching Research Ethics Workshop, Indiana University, Bloomington
- SIAM Meeting on Dynamical Systems, Snowbird, Utah

Dr. Brewer was responsible during FY07 for special initiatives and projects related to

- coordination of campus participation in state-wide or regional research initiatives in high-performance computing
- representing (with Dr. Geren) the University of Arkansas on the NASA EPSCoR Space Grant Committee
- serving on the Building Committee for the J. B. Hunt Transport Services, Inc. Center for Academic Excellence
- serving on the 2010 Commission
- serving on the Advisory Council for the Great Plains Network
- scheduling and hosting three NSF program managers for a grant workshop on the University of Arkansas campus
- 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 Powe Award sponsored by Oak Ridge Associated Universities
- chairing an advisory committee for the Office of Research and Sponsored Programs
- provided administrative support for the Research Council, especially as it relates to inquiries into cases of research misconduct
- provided administrative support for establishing the Applied Sustainability Center (now funded by the Walmart Foundation)
- assisting in the establishment of new research centers and maintaining accurate records of existing centers
- organizing and conducting six workshops for graduate students on topics related to preparing future faculty
- co-chairing (with Dr. Pat Koski) an exploratory committee on Preparing Future Faculty which will offer its first course in Fall 2007
- serving as principal investigator on a funded NSF Computer Science, Mathematics, and Engineering Scholarship Program
- hiring and supervising a linux cluster administrator for Red Diamond (the Arkansas supercomputer)
- chairing a search committee for the position of coordinator in the Southeastern Conference Academic Consortium
- chairing a search committee for the position of Technology Licensing Officer
- evaluating the Academic Analytics report on faculty scholarly productivity and sharing the results with the Deans' Council
- writing (with Dr. Geren and Dr. Mattioli) the research chapter of the Self-Study Report prepared for the North Central Accreditation Commission
- 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.

*Assistant Vice Provost for Research - Finance and Administration*

During fiscal year 2007, Ms. Gail G. Piha continued in her role as Assistant Vice Provost.

In the 2006-2007 year,

- Ms. Piha was selected as the Employee of the Quarter (1<sup>st</sup> Quarter) by the Staff Senate in Category I: Professional/Non-faculty – Administrative. She was recognized at the November 9, 2006 meeting of the Staff Senate.
- Ms. Piha served as the United Way representative for all units reporting to the Dean of the Graduate School/Vice Provost for Research.
- Ms. Piha attended monthly college business/financial officer lunch meetings which are held to promote better communication between academic colleges and schools.
- Ms. Kim Yocham who served as the Secretary II for Ms. Piha and Ms. Vicky Hartwell left the Graduate School in September 2006. Additional accounting duties supporting Sponsored



Student Programs were added to the vacant position, which was upgraded by Human Resources to an Accountant Tech II.

- Mr. Michael Rau was promoted into the Accountant Tech II position on January 19, 2007. He provides all administrative and accounting support for Ms. Piha and for the Director of Graduate Fellowships, Ms. Vicky Hartwell. He also manages the accounting for all sponsored students which involves the removal of class charges on sponsored students' account, ensuring that charges are posted correctly in BASIS and for generating invoices to sponsoring agencies.
- With invaluable assistance of the Business Office, Ms. Piha facilitated the process to secure the professional consultant services of a federal lobbyist, Van Scoyoc Associates, Inc., for fiscal years 2008 and 2009.
- Ms. Piha was on the selection committee for an architectural firm as well as a general contractor for the proposed Ozark Hall Addition / SE Auditorium project. The selection committee attended presentations by the short-listed firms and submitted final recommendations which were presented to the Board of Trustees at their May 25, 2007 meeting.
- Ms. Piha volunteered to serve on the Graduate School's Staff Performance Evaluation committee and was selected committee chairperson at its initial meeting in June 2007.

### **Survey Research Center**

#### 1. Significant achievements and changes, both positive and negative

Events of fiscal year 2006 to 2007

##### Projects

The projects completed and undertaken by the Survey Research Center (SRC) during fiscal year 2006 to 2007 are listed in Table 1. The SRC engaged in 45 projects during the year. The staff partially or completely administered 36 surveys during the year (80% of the projects) and wrote reports for 42 percent (19/45) of the projects. The SRC entered data as the focus of four projects (9% of all projects), (but data entry played a role in 40 percent of all the projects (n = 18)), analyzed data as the focus of three projects (7% of all projects) and drew UA sample for two students. The organization did preliminary work on five projects during 2006 to 2007 and followed up on four projects.

**Table 1. Projects Begun and/or Concluded in 2006 to 2007**

| <b>Projects</b>                                   | <b>Types of Investigators</b>                 |
|---|---|
| <b>U of A</b>                                     |   |
| Statewide Political Survey                        | Faculty, U of A                               |
| Institutional Web Survey on Needs for Information | Graduate student and faculty advisor, U of A  |
| NWA Survey on Various Topics, April 2007          | Non-profit, governmental agencies and UA unit |
| Analysis of NWA Omnibus Data                      | Governmental agency                           |
| Analysis of NWA Omnibus Data                      | Non-profit -- U of A                          |
| Attempted Statewide Survey on Various Topics      |   |

|  |  |
|--|--|
| Survey of Students on Classroom Civility, Report   | Administrative, U of A   |
| Survey of Faculty on Classroom Civility, Report  | Administrative, U of A   |
| Survey of Undergraduate Alumni and their Employers 2006 - Report   | Department, U of A   |
| Survey of Undergraduate Alumni and their Employers   | Department, U of A   |
| Survey of Undergraduate Alumni and their Employers   | Department, U of A   |
| Survey of Undergraduate Alumni   | Department, U of A   |
| Survey of Undergraduate Alumni   | Department, U of A   |
| Survey of Undergraduate Alumni   | Department, U of A   |
| Survey of Undergraduate Alumni   | Department, U of A   |
| Survey of Undergraduate Alumni   | Department, U of A   |
| Survey of Alumni Who Withdrew from a College   | College, U of A  |
| Survey of Students Participating in Summer Study   | Department, U of A, NSF  |
| Survey of Peruvian women on community needs, development   | UA Faculty and Staff Member  |
| Survey of UA students on tobacco issues  | Administrative, U of A   |
| Survey of UA students on graduation-related issue  | Administrative, U of A   |
| <b>Governmental Agencies</b>   |  |
| Survey of City Residents – Development   | Local government   |
| Survey of Urban Residents of a Watershed in NWA – Experimental Group, Pre- and post-training surveys and pre-training report | Partnership of UA Cooperative Extension, Local Water Utility(ies), non-profits with government funding |
| Survey of Urban Residents of a Watershed in NWA – Control Group, Pre- and post-training surveys and pre-training report      | Partnership of UA Cooperative Extension, Local Water Utility(ies), non-profits with government funding |
| <b>Non-profits</b>   |  |
| Post-treatment surveys of attendees of a local open-air market and report  | Non-profit   |
| Survey of Fayetteville households on tobacco policy  | Non-profit   |
| Survey of random sample of households in Tennessee   | Non-profit   |
| <b>Data Entry</b>  |  |
| Entry of Data from a Survey  | Faculty, U of A  |
| Entry of Health Data, extension of project   | UAMS and State Agency  |
| Formatted questionnaire and entry of data from same  | School, U of A   |
| Entry of Health Data   | State Agency   |

|  |   |
|--|---|
| Entry of Health Data   | State Agency                              |
| <b>Data Analysis</b>   |   |
| Analyzed Data from Evaluation of Teaching Methods                                  | UA Faculty                                |
| Analysis of NWA Omnibus Survey Data for UA Dept.                                   | UA Administrative                         |
| Analysis of NWA Omnibus Survey Data  | Regional governmental agency – non-profit |
| <b>Evaluation</b>  |   |
| Evaluation of Statewide Training by Phone, 2nd wave                                | Non-profit                                |
| Evaluation of Statewide Training by Paper Survey, 3rd wave                         | Non-profit                                |
| Report for Statewide Training of 2006, 2nd wave                                    | Non-profit                                |
| Evaluation of a literacy program in Benton County                                  | Two non-profits                           |
| Evaluation of a literacy program in Washington County                              | Non-profit                                |
| Evaluation of project in the Bentonville Public Schools, 2nd wave                  | Non-profit                                |
| Evaluation of a set of presentations on legal issues for non-profits, final report | Non-profit and UA Faculty and Students    |
| Evaluation of a set of educational modules on non-profit law, 2nd year             | Non-profit and UA Faculty                 |
| Evaluation of two medical education projects and report                            | UAMS                                      |
| Evaluation of two medical education projects, 2nd wave                             | UAMS                                      |
| Evaluation of a training program for non-profit leaders                            | Non-profit                                |
| Evaluation of a training program for non-profit leaders                            | Non-profit                                |
| <b>Other</b>   |   |
| Evaluation of a training program for non-profit leaders                            | Non-profit                                |
| Random sample of UA students who took an IR survey                                 | UA Graduate Student's Dissertation        |
| Random sample of UA undergraduate students   | UA student's honor's thesis               |

### Client Critiques of the SRC's Work

Clients of about six of the 21 completed projects have evaluated the SRC and some projects from 2005 - 2006 were evaluated during 2006 - 2007. The omnibus surveys have numerous participants so some evaluations remain to be done on these, but also many of the projects were completed so late in the year that evaluations will need to be conducted during 2007 - 2008.

Furthermore, annual evaluations for repeated services are redundant when the initial evaluation is very positive and circumstances change little. The evaluations are usually held with Dr. Koski and Dr. Longstreth after projects have finished. This year evaluations were also conducted by Mr. Emilian Siman and Ms. Noel Sharif. The evaluations are very positive overall. Some examples follow.

*Telephone Surveys:*

Advantages cited by clients (similar comments are grouped):

- ❖ SRC was helpful in explaining and showing how the survey might work.
- ❖ The TAC had a strict budget and a tight timeline and Molly was more than gracious in discussing how to accomplish this survey within budget and also in how to proceed with a phone survey in general.
- ❖ SRC reached 80 of 90 counties in the state in which interviews occurred.
- ❖ The client appreciates the opportunity to get us involved due to the SRC's credibility and objectivity.
- ❖ SRC did an outstanding job programming a complex survey, especially Noel and the information systems team.
- ❖ The client believes that he/she and the SRC have reached a happy medium in terms of communication.
- ❖ This was the second election cycle in a row (presidential and gubernatorial elections) in which the SRC produced closest projection done by any polling organization in the state. These results have helped this client feel more confident in using the SRC.
- ❖ The survey "has gone really well in the last couple of years."
- ❖ Costs in the past couple of years have been reasonable and the client realizes the SRC has worked hard to keep costs low.

*Web Surveys:*

- Going through the SRC was helpful because of the
  - random sample,
  - credibility of SRC data, and
  - high quality of the work
- The project director felt it was a very good experience, especially with SRC staff.
- This client believed that he/she received "An especially great response from faculty so late in semester"
- Using data collected and analyzed by the SRC, a client presented the results to faculty members in the Teaching Center. The presentation "went well" and "There were no

- questions regarding the credibility of the data. Faculty provided lots of feedback.”
- Overall, the client feels it was a good experience and that they got the results they needed and/or wanted
  - The client considers the value for the money spent on the survey to be fine and as expected.
  - The client was pleased with the outcome
  - “...our experience w/ the survey research center was very good! We felt like we received a high level of support, cooperation, guidance, and service. The fact of the matter is, w/ out the SRC, [name of graduate student] would not have been able to do the project with the quality [she/he] did.”
  - While the survey was in progress, the advisor to the thesis for which the data were being collected indicated the following “I think [student name] has learned tremendously about both the subject matter and the discipline/art of survey research. Thank you for contributing to that.”

#### *How the SRC could improve its services*

- The SRC needs to check with everyone to ensure they received the e-mailed data. Email security systems are tighter than ever so clients may not receive the emails sent.
- Telephone respondents tend to be skewed toward those with higher ages due to cell phone use among younger adults.
- Sometimes communication lags.
- Use the “Return Receipt” option when mailing clients surveys or deliverables and/or confirm with them that the item has been sent. If one hasn’t heard from the client within a day or two, email, call or somehow otherwise check in with them. This will reduce time delays and enable clients to realize that the SRC really has sent the requested materials in a timely manner.
- SRC staff need to keep project calendars better in mind
  - In at least one case, it would have eased both the SRC and the client.
  - In others, projects would be accomplished within the timelines set.
  - Completing projects as scheduled also means giving the writers time to write rather than forcing them to write in just a few hours or days.
- The client didn’t have enough letterhead to accommodate the pre-survey, but the SRC hadn’t informed them (or reinforced to them) in enough time to order it and this was the client’s first experience in working with the SRC.
- The SRC offered too many options in the proposal budget and since the client was new to working with the SRC, this made it hard to choose between them. Now that the client understands the process, he/she would have helped to stream-line the initial process so that fewer options would need to be offered.
- At least two clients wanted more analyses than they received, but didn’t have the funds to pay for them. In one case, the SRC conducted additional analyses, but when funds expired, the SRC did not do further analyses.

#### *How Results Have Been Used*

- Results have been used to
  - write an article for the faculty’s teaching newsletter,

- for a presentation to the Teaching Center,
- by a state to assess the effectiveness of particular kinds of programs.
- Develop an educational program for residents of a large watershed – homeowners, construction companies and others

### **Accomplishments in 2006 – 2007 in Relation to Goals for Year**

- 1) Continue to assertively seek work with faculty
  - a) Actively participated in the New Faculty Orientation
  - b) Approximately 62 percent of the projects done by the SRC in 2006 – 2007 were done for faculty, graduate students, administrators, departments, colleges or Cooperative Extension specialists and/or agents from the U of A. At least 15 UA faculty and three graduate students were involved in the 45 projects<sup>1</sup> on which the SRC has worked this year. In addition, work was done for at least four university administrators, one Cooperative Extension agent and eight department chairs. Thus, a total of at least 32 faculty, graduate students, administrators, departments (department chairs), or Cooperative Extension specialists, program leaders or agents have been served.
  - c) Altogether the SRC has written 25 proposals for at least 27 faculty and/or administrators
  - d) Greater efforts were not made because the SRC was operating at capacity.
  
- 2) Continue increasing work with graduate students and their advisors
  - a) Service to graduate students in 2006 – 2007 remained at three, as in 2005 – 2006.
  - b) SRC staff actively participated in Graduate Student Orientation.
  - c) One graduate level class met at the SRC during the year.
  
- 3) Personnel
  - a) To adequately staff the SRC
    - i) An Assistant Director was hired
      - (1) The first person who accepted the job did not work out; another candidate has been promoted from within
      - ii) Possibility: Hire another full-time person to supervise telephone surveys or create a full-time position that would encompass the computer technician position and a supervisor.
      - iii) Not accomplished in 2006 – 2007, but more people have been trained as telephone supervisors
    - b) Hiring additional part-time staff and assigning them to full-time staff worked somewhat well
    - c) Staff development
      - i) The SRC has had virtually no funds to devote to staff development in the past or this year. Nonetheless in 2006 - 2007, staff have been encouraged to
        - (1) Take as many of the Computer Center’s trainings as possible
          - (a) Two were taken
        - (2) Take as many of Human Resource’s special programs as possible
          - (a) 17 were taken – Distributed: One took none, another took three and two took 7 each

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<sup>1</sup> Some projects contain more than one survey and some were begun last year, but the data were analyzed this year.

- (3) ISIS or accounting-related training
  - (a) 6 trainings were taken
- (4) Management Map – 15 staff participated, including all four appointed staff
- (5) 15 staff took HIPAA training, included upgraded training
- (6) Begin the training to work with the automated questionnaire programming system
  - (a) 6 staff began training
- (7) Conference attendance:
  - (a) Research Asst. and Research Project Analyst attended the International Field Directors and Technical Conference (IFD&TC), California, 5/07
  - (b) Director attended the meeting of the Assn. of University Survey Research Organizations (ASRO) 2/15 – 2/17/07
  - (c) Research Asst. and Director attended the State of Arkansas' Watershed Advisory Group conference, Fayetteville, AR 11/2/06 – 11/4/06
- 4) Improve proposal estimation process
  - a) Using the new accounting tools, streamline and speed the process
    - i) Proposal budgeting processes were streamlined
  - b) Continue to work more closely with and learn from RSSP
    - i) A great deal was learned and SRC staff signed up for the RSSP workshop, but it was cancelled.
- 5) Improve the efficiency of operations and achieve budgetary goals
  - a) Use the accounting tools available weekly, if possible, to track project costs
    - i) From about January 5, 2007 through June 30, 2007, SRC managers met 25 times or slightly fewer and have received budgets for at least some projects 13 times. Therefore, managers were apprised of their expenditures in relation to their budgets approximately every other week, although they were informed much more frequently in January, April and May than in February or after May.
  - b) Formalize procedures
    - i) Our goal was to write at least six procedures within six months of the Mgt. Map training. Currently, however, the SRC has at least 72 procedures that have been written on a variety of subjects pertinent to SRC's work and nearly all of these have been written within the past year.
  - c) Identify a person in the SRC to maintain timelines on all projects and help project managers and all to abide by them
    - i) A variety of methods have been tried, but none seems to have worked completely.
    - ii) Small positive changes have occurred and the concept has been increasingly on managers' minds
  - d) Improve survey implementation to achieve efficiency and reliability
    - i) Developed a front-end for listed telephone surveys
    - ii) Improved the way that paper questionnaires are programmed
  - e) Seek standardization of work stations with minimal investment
    - i) The Accounting and Computer Technicians partially accomplished this through replacement and imposition of stringent operating rules with the following benefits:
      - (1) Reduced
        - (a) idle time during surveys

- (b) maintenance
    - (c) downtime
    - (d) callback loading time
  - (2) Increased interviewer productivity
  - f) Bill mid-term in projects more often.
    - i) Accomplished
  - g) Continue efforts to reduce costs.
    - i) Numerous efforts toward this end have been made. The level of business is such that expansion of staff is needed and efforts are being made to do so.
  - h) Reduce the size of reports the SRC writes, but retain the meaning
    - i) Report writing improved a lot this year because two writers improved their skills; one left to take a full-time position, however.
  - i) Communications
    - i) Meeting times for full staff meetings were reduced substantially
    - ii) Reduce meeting times for weekly managers' staff meeting and focus on prioritizing – some progress was made
    - iii) Continue learning about ourselves and each other so as to increase efficiency and productivity
      - (1) Some self-study and sharing continued as we reviewed the Team Track and Mgt. Map information and took the True Colors workshop
- 6) Continue to pursue larger research projects
- a) Search for personnel and labor shortages precluded progress on this goal
- 7) Determine the parameters for conducting the Omnibus Surveys but learn the nature of the demand for these surveys and how to market them most efficiently and effectively
- a) One set of SRC-sponsored questions were very successful in contributing to an important national debate in NW Arkansas and in garnering publicity for the SRC and U of A.
  - b) Developed a new marketing strategy after IFD&TC meeting
- 8) Capital improvements
- a) Acquire a projection system
    - i) A used projector was acquired.
      - (1) It has already facilitated teaching within the SRC, and
      - (2) Increased the number of interviewers who could be trained simultaneously, thus reducing training costs.
- 9) Seek data entry and evaluation work to supplement surveys
- a) SRC is starting to receive work related to previous work done
- 10) To continue expanding, the SRC faces space needs
- a) Additional space is being requested.
  - b) The accountant moved to the quietest large room in the SRC and rearranged the space to suit her needs and to accommodate another accounting staff member.



## Employees

Numbers and types of hourly employees the SRC employed during academic year 2006 – 2007 are listed in Table 2.

Table 2 Number and types of hourly employees during 2006 - 2007

| Semester                        | Regular<br>hourly<br>employees |                      | Temporary<br>Hourly<br>Employees |                      | Total |
|---------------------------------|--------------------------------|----------------------|----------------------------------|----------------------|-------|
|                                 | Students                       | Community<br>Members | Students                         | Community<br>Members |       |
| July 1 - Oct. 31,<br>2005       | 17                             | 4                    | 66                               | 36                   | 123   |
| Nov. 1, 2005 -<br>Feb. 28, 2006 | 14                             | 7                    | 58                               | 4                    | 80    |
| Mar. 1, - June<br>30, 2006      | 12                             | 3                    | 22                               | 17                   | 54    |

## Goals To Be Accomplished in 2007 – 2008, Including Improvements To Be Made

- 1) Continue to assertively seek work with faculty
- 2) Continue increasing work with graduate students and their advisors
- 3) Personnel
  - a) Replace the Research Project Analyst
  - b) Set some general standards for the assistant director's position
  - c) Replace the receptionist effectively
  - d) Improve hiring and training procedures of part-time staff
    - i) Assign task to the Office and Staff Coordinator
    - ii) Find a way to retain excellent student workers more effectively
    - iii) Find balance with the commitment to hire students
  - e) Improve interviewer training and supervision
    - i) Update training modules
    - ii) Put training modules onto website for easier access
    - iii) Hire another full-time person to supervise telephone surveys or create a full-time position that would encompass the computer technician position and a supervisor
      - (1) Develop a better system for determining progress of interviewers more quickly and effectively
  - f) Need a website manager
- 4) Improve proposal estimation process
  - a) Using the new accounting tools and two-step process, continue to streamline and speed the process
  - b) Continue to work more closely with and learn from RSSP
- 5) Improve the efficiency of operations and achieve budgetary goals
  - a) Use the accounting tools available to track project costs
    - i) Have project budgets every other week regularly throughout the year, except during the budget reconciliation time period, June 20 through July 25

- (a) If, however, a phone or other survey is running during June or July and selected budgets are needed weekly, they will be provided
- ii) Empower managers to realize the options they have that they may not have realized
- b) Formalize procedures
  - i) Continue writing and revising procedures as appropriate.
  - ii) Assign the “Office and Staff Coordinator” position the task of updating procedures or bringing them up for reconsideration.
  - iii) Teach people to use the procedures, critique the procedures and reinforce their use
  - iv) Make the file of procedures searchable.
- c) Continue to improve time management of projects
  - i) Empower project managers regarding the time management of projects
- d) Improve quality control on phone surveys
  - i) Refine and expand, if needed, currently used techniques.
- e) Continue to seek standardization of work stations with minimal investment
  - i) Complete the replacement of workstations with new systems
- f) Bill mid-term in projects more often.
  - i) Accountant to set a schedule for billing on-campus projects
  - ii) Accountant to set schedule for interim billing of off-campus projects so that accountant may remind Research Accounting, if necessary
- g) Reduce the size of reports the SRC writes, but retain the meaning
  - i) Continue training the Research Assistant in technical writing
  - ii) Aim to hire a Research Project Analyst who can or is also willing to write
- h) Communications
  - i) Return to prioritizing
    - (1) Find a better way to incorporate the project calendars into the meeting
- 6) Continue to pursue larger research projects
  - a) Statewide projects
- 7) Determine the parameters for conducting the Omnibus Surveys.
  - a) Try a new strategy involving mail at least on the Arkansas Omnibus Survey
- 8) Marketing
  - a) Improve the website
  - b) Need a website manager
- 9) Improve data security
- 10) Capital improvements
  - a) Would like a portable projection system
  - b) Upgrade remaining lab computers
- 11) Seek continuing data entry and evaluation work to supplement surveys
- 12) To continue expanding, the SRC will face space needs
  - a) Station for the Research Project Analyst
  - b) Storage space is needed

### **Appendix: Publications and Presentations 2005-06**

The compendium of publications and presentations by faculty members at the University of Arkansas is compiled as a separate volume.