

**Missouri College of Optometry  
2007 ANNUAL REPORT TO CAMPUS**

The Annual Report is designed to share accomplishments with the community and document quality improvement. Please do not report any data that are available through FAS, Institutional Research. Instead, synthesize what the data mean for your unit.

**I. Research**

Accomplishments

- a. What are the most significant accomplishments in research? This can include significant books, exhibitions, or performances, and especially should include prizes, awards, outstanding publications, recognition, etc.
  - Technology Transfer – Patent Applications by Bassi et al.
    - i. Light Sensitivity Meter, The Three Dot Test (TDT): A Device to Quantitatively Measure Visual Suppression and An Automatic Cap Arrangement Scoring Device for color vision
  - In the midst of significant instructional loads that are among the highest in the UM-System, faculty in the college continue to contribute to the fund of knowledge in optometry and vision science through peer reviewed publications, invited works and texts.
- b. How has the faculty incorporated research into their teaching?

The practice of optometry is evidence-based. Therefore, the curriculum and course content must be dynamic in order to incorporate recent research findings and to remain relevant in a changing health care environment. Examples of course and curriculum elements that address research include discussions of recent peer reviewed publications and active research projects in the college including the influence that those projects will/may have on patient care. The curriculum also includes writing projects that direct students to incorporate the review and application of multiple source documents and studies into the assignments.

Representative examples include: “Current papers and personal research incorporated into lectures of 6400 (Sensory Processes and Perception) and 8250 (Monocular Sensory Processes; required textbook copyright 2002), and used to upgrade four laboratory exercises for 8250. I use major studies related to the distribution and determinants of disease and other human maladies, particularly those related to conditions of the eye, in the Epidemiology class. In the Public Health course I use health policy research that impacts the practice of optometry”.

Planning

- a. Assess the quantity, quality, and/or focus of research, and describe your plans to sustain quality or improve gaps?

- Expansion of funded research is an area for development in the college. Departmental funds are available to faculty for pilot projects that have the potential to generate external funding. The funds are distributed under the leadership of the Director of Research and Graduate Studies, a part time administrative position. Tenure track faculty are afforded a reduced teaching load in order to pursue research.
- Faculty also have the opportunity to buy out a portion of their instructional responsibilities through external funds.
- Beginning in 2007 the research endowment, established in 2005 through a gift from the Ophthalmic Education Institute, will for the first time generate a full year of income distribution from the account. The additional funding will be available for research projects that have the potential for external funding.
- We are recruiting for two open tenure track faculty positions which once filled will increase the capacity for research.

## II. Teaching

### Student Learning

- a. Summarize evidence that this year's graduates from each program have met the learning outcomes.
  - Continued the development and effective implementation of a revised initial clinical privileging examination (primary care clinic) along similar methodology as the National Board of Examiners in Optometry (NBEO) Part III, closely resembling an examination, integrating pre-clinic and ocular disease course tracks.
  - Monthly grand rounds continues to serve as a requirement for continuing credentialing and privileging.
  - Course Outcome measures including proficiencies/practical examinations, assignment performance, quiz/examination scores and final course grades
  - Curricular Track Outcome measures including proficiencies and practical examinations as course requirements for Clinical Procedures, Contact Lenses, Ocular Disease/Pharmacology/Clinical Medicine, Pediatric and Binocular Vision and Low Vision Rehabilitation
  - Student evaluations including End-of-Course evaluations and End-of-Year evaluations
  - Recent graduate assessment of curriculum as it relates to preparedness for the practice of entry-level Optometry
  - NBEO sectional scores compared where applicable to the appropriate curricular track
  - Student exit interviews: for the past six years graduating seniors have participated in a feedback session just prior to graduation
  - End-of Program Evaluations completed by all graduating students
  - Other individual patient encounter evaluations; expected levels of clinical proficiency published and used as basis for evaluations; benchmarks for student patient encounter experiences of both number and type; student

patient encounter logs; benchmarks for fulfillment of patient care encounter assignments; participation in grand rounds; and clinic seminars

- Continuous open feedback is also encouraged and increasingly utilized by students
  - An evaluation of clinical competencies along six domains: patient care, optometric knowledge, professionalism, communication, systems-based practice and practice - based learning. In addition to traditional reviews of performance, usually dominated by patient care skills, students are evaluated at each externship site in each of the other areas, producing a richer determination of outcomes. Results from the first year of implementation will be used to guide the externship faculty to their fuller utilization.
- b. How did faculty use program or course-level assessment data or teaching evaluation (including midterm) data and NSSE to change their courses?
- Instructors receive the results of student completed evaluations for each of their courses. Results of student completed end of year and end of program evaluations are maintained on mygateway. Representative examples of shifts in course content include:
    - Geriatrics-- the types of in-class activities have been changed in response to student feedback.
    - Ocular Assessment – the presentation of materials is being adjusted partly as a result of student feedback.
    - Externship selection of sites and externship faculty
    - More opportunities to practice optometry off-campus
    - More patient experiences at community health centers
    - change externship students assignments at Center for Eye Care sites for more patient experiences for underclass students
    - I speak louder when lecturing
    - Changes for Optometry 8250 included increased learner-centered classroom activities, more varied assessment methods, and changes in course content and laboratory exercises.
    - I address weak performance areas on midterms in the post midterm review and include new questions on that subject area on the next test, to insure the review was effective.
- c. What evidence do you have that course requirements are intellectually rigorous (appropriate to the students' level)?
- We emphasize indirect measures which can be good indicators for the evaluation of programs in which students proceed through a prescribed lock step curriculum. Students perform well on the nationally administered examination used to qualify graduates for licensure in all 50 states. The ultimate pass rate (percent who passed all three parts of the NBEO examination prior to graduation) for the class of 2006 (the most recent graduating class for which data is available) was 94% slightly exceeding the national average.

Additional evidence is found in student completed course and end of year evaluations, and peer review of the curriculum. Beyond that, degree completion is not guaranteed upon enrollment. Students must bring not only the skill but also the will necessary to succeed. Therefore, some students find themselves in academic probation and occasionally a student will be dismissed.

- d. Do they require student research and/or creative expression? Students are encouraged to explore research as a value added extracurricular experience. If you have undergraduate and master's programs in the same discipline, what evidence do you have that the graduate program is more rigorous than the undergraduate program? Not applicable
- e. If appropriate, how would you describe the quality of dissertation/thesis supervision? Please include a discussion of how you assessed the quality of supervision.

The Director of Research and Graduate Studies monitors progress of students through the program. We had the special case this year where the dissertation supervisor left campus when the student's project and report were near completion. The graduate faculty (in consultation with the Dean of College and the Dean of the Graduate School) assigned co-director for the dissertation. The student completed the work and was awarded a degree in May.

Adjustments were also made to the committee of another student as a result of the frequent review of progress by the program director. When it was found that the advisor's knowledge in a particular area relevant to the projects was limited a content expert was added in order to maintain the appropriate rigor and quality of the work.

- f. What were your most significant community engagement/service learning activities this year?
  - LaClinica, a free medical health center primarily serving the Hispanic/Latino immigrant community of St. Louis, served by faculty and students of the College of Optometry for eye and vision care has been further expanded from bi-weekly to weekly sessions.
  - The College of Optometry continues to collaborate with the St. Louis Society for the Blind and Visually Impaired (SLSBVI) to provide low vision and rehabilitation services. The importance of this relationship was recognized in the fall of 2006 when the college was presented with the prestigious Community Service Award from the society.
  - Partnerships with 2 federally funded health centers have been strengthened further and expanded, resulting in more opportunities for patient care encounters each week. Dispensary services have been added at one center.

- Utilization of the Mobile Eye Center has been expanded in a partnership with the Area-wide Agency on Aging and area Lions Clubs. College of Optometry faculty and students provide eye and vision care on-site at several senior centers throughout the St. Louis area. This program has expanded to bi-weekly visits. Students return to each center roughly two weeks later to dispense eyewear, answer questions and provide informational materials.
  - Faculty and students of the College of Optometry have begun to provide services at the CHIPS (Community Health-In-Partnership Services) medical clinic in north St. Louis. This multi-disciplinary clinic provides services at little or no fee to the medically indigent.
  - A service learning exercise was added to the 4th year externships. Externs are asked to reflect upon their experiences as they relate to one of several self and/or patient focused questions. Service-learning offers a unique opportunity for students to get involved with their communities in a tangible way by integrating service projects with didactic and clinical learning. A growing body of research recognizes service-learning as an effective strategy to help students by:
    - i. Promoting learning through active participation in service experiences;
    - ii. Providing structured time for students to reflect by thinking, discussing and writing about their service experience;
    - iii. Providing an opportunity for students to use skills and knowledge in real-life situations;
    - iv. Fostering a sense of caring for others; and,
    - v. Providing engaging and productive opportunities for students to work with others in their community.
- g. What were the most significant student accomplishments (e.g., publications that include students, presentations by students, prizes or awards) this year?

**Derek Wiles**, UMSL junior and entering optometry student (Honors 3+4 program), presented a poster at the Undergraduate Research Symposium, April 27, 2007, entitled “Dichoptic Study of Second-Order Lateral Masking in Normal and Amblyopic Vision”

**Amanda Bahr**, 2007 Carl Zeiss Vision Fellowship, for her paper “So You’re Going to be a Surgeon Right?”

**Abigail L. Barnes**, the 2007 Alcon Award of Clinical Excellence, “Glaucoma Management and Patient Education”

**Katie J. Hahn**, 2007 Essilor of America “The Future’s so Bright, I’ve got to Wear Varilux”

**Mark Kahrhoff** (Class of 2006) -- Was recognized among the Student Entrepreneurs during the 2006 UM-System Transfer Technology Showcase for his work in using holography to measure optical power and quality of the crystalline lens. The technique may have applications for contact lens design and refractive surgery.

Other publications involving students (student in **Bold**)

**Foutch B.** and Peck C. K. Effects of gender and age on relative luminous efficiency as measured by heterochromatic flicker photometry. *Optometry and Vision Science, Supplement*, 2006.

**Foutch BK.** and Fletcher T. The Effect of gender and eye dominance on reaction times to color stimuli. *Optometry and Vision Science, Supplement*, 2006.

**Voyles S.** Henry V. Dekinder J Bennett E and Henderson B. Determining the most likely rotational direction of soft toric contact lenses. *Optometry and Vision Science, Supplement*, 2006.

Bassi C, **Sobieralski B**, Boland K, Brunig B, Borello D, Murray I. Rapid measurement of macular pigment in the clinic: Evaluation of the Quantifeye. *Optometry and Vision Science, Supplement*, 2006.

McAlister WH, Wingert TA Weaver JL, **Hanson HD**, and Amos JF. Use of clinical practice guidelines by executive directors of optometric associations. *Optometry*, 2006;77(12):622-8.

- h. What changes did you make to the program, courses, assessments, and/or program descriptions and outcome statements as a result of your findings this year?
- The strategic plan was reviewed and revised in March, 2007, by the Budget and Planning Committee and was presented to the full faculty in April, awaiting ratification. See Strategic Plan attached.
  - Scenario Based Discovery was added to the 1st year curriculum. The course is designed to provide students with opportunities to assimilate and recognize the relationships among diverse topics emphasized within the optometry curriculum. In addition the Ocular Disease and Ocular Pharmacology courses were restructured to accommodate a modular, systems based approach introducing students to disease, organ systems affected, pharmacology and the medical management of ocular and systemic disease. The new sequence is comprised of three courses. The specific adjustments may be found on pages 89 - 93 of the College Bulletin  
<http://www.umsl.edu/divisions/optometry/pdfs/2006OptometryBulletin.pdf>
  - A service learning exercise was added to the 4th year externships. Externs are asked to reflect upon their experiences as they relate to one of several self and/or patient focused questions. Service-learning offers a unique opportunity for students to get involved with their communities in a tangible way by integrating service projects with didactic and clinical learning.
  - The admissions committee has adopted the following policy regarding non-graded (Pass/Fail or Satisfactory/Unsatisfactory) pre-requisite courses. Incoming students with an OAT reading comprehension score of

320 and an overall GPA of 3.2 may submit up to 12 non-graded credit hours (6 English credits and 6 Liberal Arts credits excluding Mathematics, Science and Psychology courses) for admissions.

- The entry level standard document was expanded to include three new bulleted items pertaining to the impact of genes, best practices and information technology. A modification to an existing bulleted item clarifies the inclusion of injectable agents within the standards. The revised standards are below.

*College of Optometry  
University of Missouri St Louis  
Enriching Lives through Vision*

**Entry Level Standards**

*The faculty has approved the following optometric Entry-level Standards:*

*Doctors of Optometry must have an established knowledge of the basic and clinical sciences in order to provide quality eye and vision care to their patients. The academic foundation must be broad and include the biological, medical, vision and optical sciences, as well as a basic understanding of the health care delivery system. A Doctor of Optometry must recognize the dynamic nature of knowledge and possess the commitment and skills needed to responsibly assess and apply new information and treatment strategies throughout their career.*

*The UM- St. Louis College of Optometry shall ensure that before graduation each student will effectively utilize and demonstrate a working knowledge in patient care within each of the following areas:*

- *basic body systems, with special emphasis on the ocular and visual system and their interrelationships to the body as a whole;*
- *the impact of genes and their interaction with behavior, diet and the environment on human health;*
- *the various processes and causes that lead to dysfunction and disease and the effect that these processes can have on the body and its major organ systems, with special emphasis on the ocular and visual systems;*
- *the mechanisms of actions of the various classes of pharmaceutical agents, including injectable agents, their interactions, along with their safe and effective use for the treatment of disease and conditions affecting the eye and visual system;*
- *the structures and processes contributing to the development of refractive error and other optical or perceptual abnormalities of the visual system;*
- *the optics of the eye and ophthalmic lens systems (including spectacles, contact lenses, and low vision devices) used to correct refractive, oculomotor and other vision disorders;*
- *visual development and vision function with respect to deviation and enhancement of conditions such as, but not limited to, strabismus, amblyopia, oculomotor, accommodation, and visual perception;*
- *vision therapy and other rehabilitative methods used for the management of common visual disorders;*
- *the psychosocial dynamics of the doctor/patient relationship and an understanding of the social, psychological, and economic forces affecting diverse patient populations;*
- *the practice management structure and strategies as they pertain to various practice settings;*
- *the critical elements of verbal and written communications and understanding of the need for clear and appropriate documentation of patient encounters;*
- *the concepts of refractive surgery and its management;*
- *the conscientious use of current best practices in patient care decision making;*

- *a broad-based multidisciplinary understanding of patient care;*
- *an appreciation for and a commitment to lifelong learning;*
- *information management and technology in the delivery of eye and health care;*
- *and an understanding of and commitment to uphold the ethical obligations imposed by the tenets of the Optometric Oath of Practice.*

*2001 School of Optometry  
Revised March, 2007*

- **Student Recruitment**

- i. The quality, as demonstrated by entering GPA and OAT scores, of matriculating students remains high. Many who decline an offer of admission continue to be among the highest qualified applicants. Non-resident applicants are more likely to decline an offer of admission. The fundamental reason for declining an offer of admission continues to be a “low perceived value” relative to our peers. Our application and admission processes and admissions staff consistently receive high marks. We continue to assess the move to a more credential based scholarship awards process which was initiated for the class entering in the fall of 2005. One expected outcome of that shift is to allocate the available scholarship dollars in the most efficient way.

- **Teaching and Learning**

- i. A relevant and rigorous educational experience is continuously reviewed by the faculty and administration. Student performance on all parts of the NBEO examination remains high. The ultimate pass rate for the class of 2006 was at a 10year high for UMSL graduates and exceeded the national average.
- ii. Beginning with the class of 2009 the faculty have directed their attention to science and reading comprehension scores for decisions regarding admissions and scholarship awards. The move was the result of an analysis of Predictor variables for the graduates in 2002, 2003, 2004, 2005 and 2006 which suggested that the pre-admission OAT scores for science and reading comprehension are more indicative of success on Part I of the NBEO examination than the overall OAT score which had been emphasized previously.
- iii. The first time Part I NBEO Pass rate for UMSL students remained high in 2006. The mean scaled score for UMSL students exceeded the national average for the third year in a row. Pass rates for Parts II and III continue to meet or exceed the national mean pass rate. We believe that the continued high achievement on the NBEO examination affirm the multiple initiatives to prepare students for practice, including the recruitment of the highest qualified applicants through merit and need based scholarship awards, provision of the summer NBEO review course at the end of the second professional year and ongoing communication of



educational and curricular outcomes, and high expectation to students.

- iv. We continue to have a broad representation of states and geographic areas among matriculating students which is attributed to our recruitment program. We will continue to direct resources toward the recruitment of a diverse and highly qualified student body.
  - v. Feedback from non-matriculating students suggests that overall perceived value continues to be a substantial deterrent from enrolling at UM-St. Louis. We continue to seek program efficiencies and limits to increased educational costs. In 2006, the College was placed in a position of high priority for capital improvements by the UM-System Board of Curators. Building upon the 2005 programmatic needs assessment, a conceptual rendering of a new facility was completed in the fall of 2006. The proposed facility includes approximately 60,000 square feet of assignable space and comes with an estimated cost of \$28 million.
  - vi. Student assessment of teaching and learning suggests that overall there is high satisfaction with the curriculum. One area that consistently receives lower marks is practice management especially as it relates to the business aspects of optometric practice. The curricular model entitled FastTrac developed by the Kauffmann Foundation and coordinated by the Missouri Small Business Development Center was instituted in the Spring of 2005 and funding for the curriculum was continued into 2006 and 2007. Many graduates who pursue independent practice upon graduation have attributed their decision to the influence of this course. Thus, we plan to continue to seek funding to offer FastTrac.
- Patient Care
    - i. The breadth and depth of the patient experiences for students remains high. We continue to depend upon participation in public and private health care plans for patients. Adult Medicaid was restored in September of 2006. The UMSL students benefit plan supported by student fees has been an important contributor to the overall patient census.
  - Research and Technology Transfer
    - i. Faculty and students have received recognition for research and scholarship during 2006-07. None-the-less this is an area potential growth for the college. A search for two faculty positions which have research as a substantial portion of the expectations was initiated in the spring of 2007.
  - Resource Development

- i. An increase in state appropriations to the health professions programs including the College of Optometry is a priority for the UM-System. One new endowment fund for indigent eye care was established in 2006 made possible by a community driven fundraising event. The campus administration is supportive of the program planning initiative with the new facility for the college being among the highest campus priorities.

### Planning

- a. How did this year's enrollments (on-campus, off-campus, on-line) compare to last year's? Enrollments continue to be above capacity for our facilities
- b. What new programs were approved or are in progress? We are working to establish a fourth affiliated residency site. It is projected to admit the first resident in the summer of 2007.
- c. What (if any) programs, tracks, or courses have been considered for elimination or eliminated this year? None What evidence was used in that consideration? Mission, goals, objectives, program outcomes.
- d. What are your plans to sustain or increase enrollments, including plans for courses and programs offered at other sites, during winter intersession, or online? Enrollments which are restricted by the current facility and estimates of the demand for new optometrists are currently at full capacity. We will continue to pursue initiatives that will facilitate the recruitment and retention of the highest qualified and best prepared applicants.

### III. Service

- a. What were the major contributions your unit made to faculty governance and other campus activities? Participation on campus committees. One member of the faculty was part of the UM-System New Faculty Teaching Scholars program.
- b. How did members of your unit promote the profession?  
Faculty in the college participate as members of and in leadership positions for local, regional and national professional organizations.
- c. How did your faculty fulfill the university's land-grant mission with community service? See Section II. Student Learning

### IV. Economic Development

- a. Besides the workforce development of our regular classes, was your unit involved in any economic development activities? If so, please specify tech transfer, consulting/partnerships designed to promote organizations' growth and/or effectiveness, and other similar activities.
  - (See I. Research *Technology Transfer*)

### V. Continuous Improvement

- a. What progress have you made in plans made after your last Five-Year Review?
- b. What other critical issues have arisen since your last review, and what are your plans for addressing them?

- Challenge: Maintaining highly qualified faculty Strategies: Faculty are eligible for development opportunities that will enhance and/or expand their teaching and research opportunities. The recruitment of three full-time faculty positions was initiated in the spring of 2007. All faculty are invited and encouraged to participate in campus and system development opportunities.
  - Challenge: Need to increase participation in managed care plans and other initiatives that attract patients to the clinic sites operated by the College of Optometry. The result will be an increase in the number of patient encounters at these locations and an increase of collections derived from clinical operations. Strategies: The administration will continue to work with campus and university officials in order to maintain and increase eligibility for participation in managed care plans and seek to improve the timeliness of negotiations associated with the contract implementation and credentialing process.
  - Challenge: Need to increase collections for clinic operations by increasing the number of patient encounters while maintaining appropriate billing and collections within college operated facilities. Strategies: We will continue initiatives including marketing and the pursuit of collaborative agreements with community-based groups / agencies / companies in order to provide eye and vision care to their constituents.
  - Challenge: High number of assigned classroom hours. Students enrolled in the first three years of the curriculum have limited time to integrate and process the materials that are presented in a traditional lecture format. One of the objectives of the ongoing curriculum review is to increase the use of case based group learning and self- discovery exercises. Strategies: The faculty and administration will continue to pursue workshops and other resources in order to incorporate best practices for teaching and learning. The faculty is committed to refinement of the curricular track structure.
  - Challenge: Facility design and aesthetics inhibit effective work processes, patient census, student and faculty recruitment. Strategies: The administration will continue to work with university and campus officials in order to formulate plans for a new facility. This will require cooperation throughout the campus by facilitating fundraising efforts, university system and the profession.
- c. How do you plan to assess the success of the plans you have made either from the last Five-Year Review or in response to other critical issues? We have a comprehensive outcomes assessment initiative which is updated at least annually