The Vision Research Center of Kansas City was founded as and is a well established collaboration of several of UMKC schools and Kansas City Medical Centers and thus offers an unprecedented interdisciplinary synergy with a unified goal: to better diagnose, prevent, and treat eye disease and vision disorders in order to make a difference in the lives of tens of millions of people worldwide.

To this end, the center conducts federally and industry funded basic, translational and clinical research to develop new medical therapies and offers patient care in all subspecialties of ophthalmology. The center's nationally recognized excellence in research, patient care and medical education contribute to UMKC's strengths in the life sciences.

Past, present and future objectives of the Vision Research Center:

- **Provide a direct avenue for basic and translational research in eye and related diseases**
- **Transfer basic science findings seamlessly into practical use with patients through translational research**
- **Develop new therapy approaches urgently needed by physicians in the US and worldwide**
- **Provide educational excellence**
- **Ensure patients receive the most advanced medical treatments available**
- **Become national center of excellence for eye research**

### The Center and its Faculty

Vision Research Center faculty are academic researchers and clinician scientists from the University of Missouri Kansas City's Schools of Medicine and Pharmacy with ongoing international and national collaborations with other universities, institutes and private industry.

#### Basic and Translational Research
- William G. Gehrule, PhD
- Simon Kup, PhD
- Dr. H. Law, PhD
- Dr. J. Raheem, PhD
- Dr. J. Haufler, MD
- Dr. A. Wallen, MD

#### Contact Lens and Low Vision
- Dr. J. Tischer, OD
- Dr. D. Griz, OD, MPH

#### Ophthalmology and Ophthalmology Surgery
- Dr. B. Lyon, MD
- Dr. S. Ploehs, MD
- Dr. J. Reihl, MD
- Dr. A. Heinrich, MD
- Dr. R. Sabean, MD
- Dr. N. Sabean, MD

#### Residency Program
- Dr. A. Cassell, MD
- Dr. A. Poulose, MD
- Dr. T. Walline, MD
- Dr. T. Walline, MD

#### Glaucoma
- Dr. K. Poulose, MD
- Dr. K. Poulose, MD
- Dr. K. Poulose, MD
- Dr. K. Poulose, MD

#### Neuro-Ophthalmology
- Dr. S. Wallin, MD
- Dr. S. Wallin, MD
- Dr. S. Wallin, MD

#### Ocular Oncology
- Dr. K. Bissell, MD
- Dr. M. Rupani, MD
- Dr. M. Rupani, MD

### Commercialization Potential

#### The Vision Research Center:
- **The Vision Research Center offers enhanced opportunities for students and doctors in training at UMKC to work on innovative research studies.**
- **Support from NIH/NEI, NIA, NCRR, NIDDK, NCI**

### Benefit to the region
- **The Vision Research Center fosters a unique, state-of-the-art environment for cutting edge research, training and patient care.**
- **Faculty and research accomplishments of the Vision Research Center have already been recognized by the state of Missouri and key opinion leaders at the state level, nationally and internationally.**
- **Through this national and international recognition, the Center will become a national and international center of excellence as a whole to achieve national and international recognition.**
- **In addition this will also offer regional institutions to a national profile and the ability to attract top investigators and increased public and private funding.**
- **The collaborative setup of the Center also allow for efficient interactions with a number of organizations in Kansas City including institutes, local professional schools of Pharmacy, Nursing and Medicine that have designated vision research as one of their research focus points and is actively engaged in life sciences research and formal affiliations with all major Kansas City hospitals that conduct biomedical research.**
- **The diseases researched and targeted by the Vision Research Center are macular degeneration, glaucoma and diabetic retinopathy, together constitute the bulk of vision loss in the United States, but more importantly also disproportionally affect minority populations experiencing disparities in ophthalmologic health care and therapy outcomes. These diseases affect a significant and growing number of people, especially the minority populations and the medically underserved, a current and growing problem in the Kansas City community. With the aging of America and the baby boomer generation entering retirement age, a dramatic increase in the incidence of these diseases is expected in the next decade, a national trend that is mirrored but also more prevalent in the Greater Kansas City area due to its higher percentage of minority populations experiencing health disparities. Therefore, the mission and goals of the Vision Research Center directly impact people in the region and the country by improving the quality of their lives and providing access to the best health care available.**
- **Kansas City is already well known for its leadership and innovation in ophthalmology. The Vision Research Center builds on this basic, translational and clinical research translation to the region’s burgeoning bioscience intuitive through biomedical research and education.**
- **The Center’s investments and commitments to both infrastructure and personnel for vision research are substantial and have an excellent chance of expanding.**
- **With education of researchers and health care professionals in the areas of basic, translational and clinical research the Vision Research Center represents an excellent potential to advance science education and workforce development regionally and nationally.**
- **This is expected by the Vision Research Center’s outstanding track record in producing a highly educated workforce and placing its graduates in high level positions that in turn attract additional opportunities for growing and creating a highly functioning workforce. The impact of the Vision Research Center on the regional and national economy and providing well-paying jobs.**

### The Vision Research Center:
- **Collaboration between UMKC and Kansas City Medical Centers offers an unprecedented interdisciplinary synergy with a unified goal: to better diagnose, prevent, and treat eye disease and vision disorders in order to make a difference in the lives of tens of millions of people worldwide.**
- **The Vision Research Center continues to gain national prominence through publications in various professional journals and presentations at scientific conferences by its faculty members, researchers, post-doctoral associates, and graduate students. It also provides significant opportunities for students and doctors in training at UMKC to work on innovative research studies.**
- **Support from NIH/NEI, NAIC, NCI, NRIR, NIDRR, NIDCD**

### The Answer

#### Basic Research

- Age-related Macular Degeneration or AMD leads to loss of central vision. No effective treatments are available for 90% of patients suffering from this chronic disease.

#### Translational Research

- Glaucoma affects 4 million people in the US, is the second most common cause of vision loss in African-Americans. Despite advances in drug and surgical treatment options, effective long-term treatment options are not available.

#### Clinical Research

- Diabetic retinopathy affects over 5 million individuals and is a disease affecting the extra and visual function in both juvenile and type 2 diabetes. Diabetic retinopathy can lead to blindness, effective long-term treatment options are not available.

#### Patient Care

- Age-related Macular Degeneration or AMD leads to loss of central vision. No effective treatments are available for 90% of patients suffering from this chronic disease.

### The Challenge

- It is estimated that over 9 million people over the age of 40 have early signs of Age-related Macular Degeneration - the most common cause of decreased vision in people over 65. For almost 90% of these patients no effective treatment is available.

- Diabetic retinopathy also affects millions of individuals and the numbers are rising rapidly due to an increase in the incidence of juvenile and type 2 diabetes.

- Glaucoma, another threat of vision among otherwise healthy adults, is the most common cause of decreased vision in the African-American population. Effective treatment options for both are not available.

### The Vision Research Center covers the following research areas:

- **Pharmaceuticals**
  - Biologicals / Sensor Technology
  - Nutritional Research

- **Micro- / Nano-Sensor Technology**

- **Devices**
  - Biotechnological / Diagnostic

- **Facilities**
  - Commercialization Potential

- **The Vision Research Center has ongoing clinical trials in the areas of:***

  **Vitreoretinal Tracton (Macular Pucker/Macular Hole)**

  **Diabetic Retinopathy**

  **Visual Rehabilitation Therapy Trial**

  **Age-Related Macular Degeneration**

### The Vision Research Center:

**Collaboration between UMKC and Kansas City Medical Centers offers an unprecedented interdisciplinary synergy** with a unified goal: to better diagnose, prevent, and treat eye disease and vision disorders in order to make a difference in the lives of tens of millions of people worldwide.