

**CURRICULUM VITAE**  
**Brian S. McKay, Ph.D.**

**Chronology of Education:**

College

University of Wisconsin, Milwaukee, WI                      1982-1987      B.S.

Graduate School

Medical College of Wisconsin, Milwaukee, WI              1989-1995      Ph.D.

Postdoctoral training

The Scripps Research Institute                                      1995-1997

Dissertation: "Development and Analysis of a Model System for Examining Epithelial Cell Organization". Advisor: Janice M. Burke, Ph.D.

Major field(s) Cell Biology

**Chronology of Employment:**

Kohart Inc., Assistant Manager, 1981-1987

Medical College of Wisconsin, Laboratory Technologist, 1987-1989

Duke University, Research Assistant Professor, 1997-2002

University of Arizona, Assistant Professor, 2002-2008

University of Arizona, Associate Professor, 2008-2019

University of Arizona, Professor, 2020-Current

**Honors and Awards:**

The Scripps Research Institute Award for Excellence in Vascular Biology, 1996

Research to Prevent Blindness Career Development Award, 1998

Community Award "Outstanding Medical Researcher" Tucson Media Association, 2017

**Citizenship: USA**

**Service** (for last 5 years, or period in current rank):

Committee on Cell transplantation and Regenerative Medicine 2014-Present

**Teaching:**

Duke University: 2002-2002, Laboratory Instructor for Introduction to Cell Biology.

Duke University: 2000-2002, Laboratory Instructor for Microanatomy.

University of Arizona: 2003, Facilitator for Problem Based Learning.

University of Arizona: 2003, Laboratory Instructor for Histology.

University of Arizona: 2003, Facilitator for Problem Based Learning.

University of Arizona: 2003, Laboratory Instructor for Histology.

University of Arizona: 2005, Lecturer in Science Writing

University of Arizona: 2006, Lecturer in Medical Neuroscience

University of Arizona: 2006, Facilitator in Medical Neuroscience

University of Arizona: 2007, Facilitator in Medical Neuroscience

University of Arizona: 2008, Lecturer in Neuropharmacology

University of Arizona: 2008, Facilitator in Medical Neuroscience

University of Arizona: 2008, Lecturer in Medical Neuroscience (Phoenix Campus)

University of Arizona: 2004-2008, Faculty participant, Current Research in Ophthalmology and Vision Science Journal Club

University of Arizona: 2008, Course Director, Vision Science Colloquium

University of Arizona: 2009, Facilitator in Medical Neuroscience

University of Arizona: 2009, Course Director, Vision Science Colloquium

University of Arizona: 2009, Facilitator in Cardio, Pulmonary, Renal Medical Block

University of Arizona: 2010, Facilitator in Medical Neuroscience

University of Arizona: 2010, Facilitator in Cardio, Pulmonary, Renal Medical Block

University of Arizona: 2010, Course Director, Vision Science Colloquium

University of Arizona: 2010, Lecturer, Medical Pharmacology – Ocular Pharmacology I&II

University of Arizona: 2011, Facilitator in Medical Neuroscience

University of Arizona: 2011, Facilitator in Cardio, Pulmonary, Renal Medical Block

University of Arizona: 2011, Course Director, Vision Science Colloquium

University of Arizona: 2011, Lecturer, Medical Pharmacology – Ocular Pharmacology I&II

University of Arizona: 2012, Facilitator in Cardio, Pulmonary, Renal Medical Block

University of Arizona: 2012, Course Director, Vision Science Colloquium

University of Arizona: 2012, Facilitator in Medical Neuroscience

University of Arizona: 2012, Lecturer in Medical Neuroscience

University of Arizona: 2012, Laboratory instructor in Medical Neuroscience

University of Arizona: 2013, Facilitator in Cardio, Pulmonary, Renal Medical Block

University of Arizona: 2013, Facilitator in Medical Neuroscience

University of Arizona: 2014, Facilitator in Cardio, Pulmonary, Renal Medical Block

University of Arizona: 2014, Facilitator in Medical Neuroscience

University of Arizona: 2015, Facilitator in Cardio, Pulmonary, Renal Medical Block

University of Arizona: 2015, Facilitator in Integrated Medicine.

University of Arizona: 2016, Facilitator in Integrated Medicine. (Fall semester)

University of Arizona: 2017, Facilitator in Integrated Medicine. (Spring semester)

University of Arizona: 2017, Facilitator in Integrated Medicine. (Fall semester)

#### Students:

MS. Thesis Committee for Katherine M. Hardy. Gerontology Department, University of Arizona. Graduation: 2003

Ph.D. Dissertation Committee for Laura E. Lamb, Department of Chemistry. Duke University. Graduation: 2004.

Ph.D. Dissertation Committee for Tyson R. Kinnic, Physiological Science Training Program, University of Arizona. Graduation: 2006.

Undergraduate Research: Carrie Whiting, BS. 2003-2006. Department of Biochemistry, Awarded the Annual Outstanding Undergraduate Researcher in 2006.

Ph.D. Dissertation Committee for Kaspar Russ, Department of Neuroscience, University of British Columbia, Vancouver, Canada. 2013

Medical Student Teaching, University of Arizona, Ryan Teeple, Graduated 2005-2008, Awarded Medical Student Research Scientist Best in Class 2008.

NIH High School Student Research Program, University of Arizona:  
Moriah Martinez, Summer 2014.  
Angela Weger, Summer 2014

Undergraduate Research: Christina Locke 2012-2015

Masters student Biomedical Engineering: Kyle Patrick Hadinger 2015

Medical Student Research: Trent Bowen 2012-2015 MSTP program. Trent won the Medical

Student Research Best in Class, 2015

Master Student Pharmacology program, Doraid Sadideen, graduated with his MS spring 2016.

Master Student Thesis Committee, Cell and Molecular Medicine, Amanda Chung (Current)

**Current Laboratory Students:**

Anna Figueroa, Honors research program, Summer 2016-present

Sara Ann Sillik, Honors research program, undergraduate freshman. Fall 2016 – present.

Mariel Piechowicz, MSTP program, first year medical student. Fall 2016 – present.

**Outreach:**

Local/state

- 12/02 “Transplantation of RPE to Treat Age-Related Macular Dystrophy” Green Valley Community Center
- 1/03 “To RPE or Not to RPE: Transplantation is the Question” Diseases of the Aging Eye Community Symposia
- 1/03 “RPE Mythology” Science of Eye Disease
- 1/04 “RPE Transplantation for treating diseases of aging” Scottsdale Community Center.
- 4/06 “AMD Research: Potential and Promise” Tucson Association for the Blind, Tucson, AZ
- 4/06 “Transplantation of RPE cells for Degenerative Diseases” Stem Cell Conference Tucson, AZ.
- 10/06 “OA1 function in Pigmentation and Disease”, The Sunstone Healing Center, Tucson AZ.
- 12/06 “Cell Based Therapy for Parkinson’s Disease” The Parkinson’s Disease Research Program, Duvall Auditorium.
- 5/07 “RPE Transplantation for Parkinson’s Disease” Frontiers in Medicine, Kewitt Auditorium, Tucson AZ.
- 2007-present: Medical Research Building Neuroscience Program, Bi-monthly Parkinson’s Tours and lunches for the community.
- 3/08 “Cell Based Therapies for the Treatment of Parkinson’s Disease” Keynote Address. Power Over Parkinson’s Tucson Conference, Marriott Starr Pass Resort.
- 4/08 “RPE Transplantation for Parkinson’s Disease” Sierra Vista Parkinson’s Disease Association, SierraVista, AZ.
- 5/08 “How RPE Functions to Treat Parkinson’s Disease” Frontiers in Medicine, Kewitt Auditorium, Tucson, AZ.
- 2/13 “New ideas and methods to treat and prevent AMD” University of Michigan Alumni Association. Skyline Country Club, Tucson, AZ.
- 2/15 “Ocular pharmacology for the most eye diseases” University of Arizona Optometry Club. Science and Engineering Library.
- 2/16 “New Hope to Stop the AMD Epidemic” Tucson Breakfast Lion’s Club, Tucson, AZ.
- 2/16 “AMD and Glaucoma – Two Sides of the Same Coin?” University of Arizona Center on Aging, Tucson, AZ
- 3/16 “Recent Advances in AMD: We can prevent the disease” Friends of Yuma Society, Yuma Arizona.
- 9/16 “Can We Stop AMD” Oro Valley Vision support group, Oro Valley, AZ

- 3/17 “New Hope to Stop Blindness” Voyager Park Lecture Series, Tucson, AZ  
9/17 Community Award “Outstanding Medical Researcher” Tucson Media Association, 2017

**Media:**

**Radio:**

- 12/02 KZAZ ‘Star of the Day’ discussing the use of cultured cells to treat AMD and Parkinson’s Disease.  
11/15 .1 KQTH 104.1 “L-DOPA may Prevent AMD”. Phoenix, AZ

**Internet:**

- November 15, 2015: VIDEO: Researchers look at effect of L-DOPA on timing of AMD onset. News release American Academy of Ophthalmology annual meeting.  
12/15 BrightFocus Chat: December 21. “L-DOPA may Prevent AMD”. Live discussion with a call in audience.  
7/17 <https://www.facebook.com/kvoa4/posts/1606386226060715>

**Television:**

- 12/02 KVOA News at 6&10pm discussing the laboratory breakthroughs to treat AMD.  
2/03 KVOA “One on One” Discussion of how laboratory research and recent breakthroughs may relate to AMD and Parkinson’s Disease treatments.  
2/25/07: Fox News: In Focus. McKay, Cell based therapies for Parkinson’s Disease  
3/11/07: KTTU: In Focus with Bob Lee: Parkinson’s Disease.  
1/31/13: KGUN9 News: ‘Eyeball Express’ gets vision research rolling  
11/10/15: KVOA4 News: “Prevention of AMD with L-DOPA”  
<http://www.kvoa.com/story/30486589/ua-led-study-reveals-degenerative-eye-disease-prevention-possible>  
7/10/17: KVOA News “UofA researchers working to prevent the number one cause of blindness”  
<http://www.kvoa.com/clip/13462543/u-of-a-researchers-working-to-prevent-the-number-one-cause-of-blindness-in-people-over-55>  
7/15/17: KVOA News: ‘UA leads way to Blindness’  
<http://www.kvoa.com/story/35805357/ua-leads-way-to-cure-the-1-cause-of-blindness-in-the-world>  
8/17. Ivanhoe Media group, include news in 55 cities (large market only), radio spot, and internet blog, and video post.

**Press Releases and Articles related to my AMD and L-DOPA results:**

**Impact:** A google search of “AMD and L-DOPA” returns over a thousand stories and news releases discussing my retrospective study of AMD incidence in those taking L-DOPA. These stories are in many different languages, indicating the **immediate world-wide impact of my work.**

**Examples:**

[https://uanews.arizona.edu/sites/default/files/FriendsOfUA\\_Dec2015.pdf?utm\\_source=Friends+of+University+of+Arizona&utm\\_campaign=9f3b4ff5f0-2015+December+Friends+of+UA12+16+2015&utm\\_medium=email&utm\\_term=0\\_5d46115f44-9f3b4ff5f0-241547885](https://uanews.arizona.edu/sites/default/files/FriendsOfUA_Dec2015.pdf?utm_source=Friends+of+University+of+Arizona&utm_campaign=9f3b4ff5f0-2015+December+Friends+of+UA12+16+2015&utm_medium=email&utm_term=0_5d46115f44-9f3b4ff5f0-241547885)

Additionally, the Flinn Foundation mentioned the research in their November newsletter and the UA Now newsletter that reaches 120,000 readers mentions it at <https://uanews.arizona.edu/node/61669>.

Below are some additional clips. (The news release also went on EurekAlert!)

12/10/2015

**Researchers seek path to prevent macular degeneration** (*Dr. Brian S. McKay, associate professor at the University of Arizona College of Medicine -Tucson*)

[US News & World Report](#)

[Yahoo! News](#)

11/19/2015

**Your eyes on dope: Why dopamine could be the solution for macular degeneration**

(*Brian McKay, PhD, associate professor, Department of Ophthalmology and Vision Science, University of Arizona*)

[Arizona Daily Wildcat](#)

11/16/2015

**UA Study Finds Macular Degeneration Can Be Prevented** (*Brian McKay, PhD, associate professor, Department of Ophthalmology and Vision Science, University of Arizona*)

[Arizona Public Media](#)

[Inventor Spot](#)

[KPHO Phoenix](#)

[KTVK-TV](#)

11/13/2015

**Parkinson's Drug Shows Promise Against Macular Degeneration** (*Brian McKay, PhD, associate professor, Department of Ophthalmology and Vision Science, University of Arizona*)

[Drugs.com](#)

[MedicineNet.com](#)

[NZHealthTec.com](#)

[The Health Cast](#)

[Fox-Carolina](#)

11/12/2015

**UA scientist led research on macular degeneration** (*Dr. Brian McKay, associate professor of ophthalmology and vision science and cellular and molecular medicine at the University of Arizona College of Medicine*)

[Arizona Daily Star](#)

[Health Medicine Network](#)

[NZ Health Tec](#)

[Science Codex](#)

[Science Daily](#)  
[TulsaCW.com](#)  
[PressReleasePoint](#)  
[Rocket News](#)  
[ScienceNewsline](#)  
[Waukesha Now](#)  
[Yahoo! Finance](#)

11/10/2015

**Macular degeneration may be treatable with Parkinson's drug** (*Brian McKay, PhD, associate professor, Department of Ophthalmology and Vision Science, University of Arizona*)

[HealthNewsDigest.com](#)  
[Examiner.com](#)  
[Business Standard](#)  
[UPI.com](#)  
[Medical News Today](#)  
[Bel Marra Health](#)  
[EurekAlert \(press release\)](#)

New study: Leading cause of blindness could be prevented or delayed

- [Yahoo!, 11/9/15](#)
- [UPI, 11/9/15](#)
- [Health Medicine Network, 11/9/15](#)

A drug used to treat Parkinson's and related diseases may be able to delay or prevent macular degeneration, the most common form of blindness among older Americans. The findings, published in the American Journal of Medicine, are a groundbreaking effort in the fight against age-related macular degeneration, or AMD, which affects as many as 11 million Americans. "Rather than looking at what might cause AMD, we instead wondered why certain people are protected from AMD. This approach had never been done before," says senior author Brian McKay of the UA.

**Intramural Service:**

University committee(s) Duke University Institutional Animal Care and Use Committee, Departmental representative, 1997-2002. Member: Visual Sciences Training Grant Committee 2004-2012.

College of Medicine Arizona Cell Transplantation and Regenerative Medicine committee

**Extramural Service:**

Guest Editorial Board Member, Investigative Ophthalmology and Visual Science. (2001-2004).

Veterans Administration internal scientific support Merit Review panel (2000, 2001, 2002, 2005).

Grant Reviews: The Ophthalmic Research Institute of Australia (2007, 2014, 2015)  
Kentucky Science Foundation (2006, 2007)

Editorial Board Member, International Journal of Ophthalmic Pathology. (2012-current)  
Ad Hoc member of NIH Biology of Vision study section panel, 10/16  
Grant reviews spring session, Vision for Tomorrow Foundation 6/17  
Grant reviews: Macular Disease Foundation Australia Research Grants Program 7/17

**Panels:**

Scientific Advisory Panel, Titan Pharmaceuticals, NJ. 2005-2012.  
Scientific Advisory Panel, Berlex Inc., CA 2005-2007 .  
Scientific Advisory Panel, Schering AG, Germany, 2007  
Scientific Advisory Panel, Bayer AG, Germany, 2007-2009.  
Collaborative Research Agreement, Lexicon Genetics Inc, TX. 2006-present.  
Collaborative Research Agreement, Novartis Institutes of BioMedical Research, MA.  
2012-Present.  
Arizona Stem Cell Research Advisory Committee, 2006-present.  
Scientific Advisory Panel, The SnyderBiomedical Corporation, 2008-present.

**Manuscript reviews for the following journals:** PLoS Genetics, PLoS Medicine, PLoS One, Journal of Biological Chemistry, Biochemistry, Journal of Cell Science, British Journal of Pharmacology, Investigative Ophthalmology and Visual Science, Experimental Cell Research, Experimental Eye Research, Current Eye Research, Molecular Vision, International Journal of Ocular Pathology, Journal of Ocular Pharmacology and Therapeutics, Brain Research, International Journal for Molecular Sciences.

**Publications/Creative Activity:**

1. Jaffe, G. J., Green, G. D. J., **McKay, B. S.**, Hartz, A., and Williams, G. A. (1988). Intravitreal Clearance of Tissue Plasminogen-Activator in the Rabbit. *Archives of Ophthalmology* **106**, 969-972.
- \*2. Burke, J. M., **McKay, B. S.**, and Jaffe, G. J. (1991). Retinal-Pigment Epithelial-Cells of the Posterior Pole Have Fewer Na/K Adenosine-Triphosphatase Pumps Than Peripheral Cells. *Investigative Ophthalmology & Visual Science* **32**, 2042-2046.
- \*3. Arrindell, E. L., **McKay, B. S.**, Jaffe, G. J., and Burke, J. M. (1992). Modulation of Potassium-Transport in Cultured Retinal-Pigment Epithelium and Retinal Glial-Cells by Serum and Epidermal Growth-Factor. *Experimental Cell Research* **203**, 192-197.
- \*4. Murray, T. G., Jaffe, G. J., **McKay, B. S.**, Han, D. P., Burke, J. M., and Abrams, G. W. (1992). Collagen shield delivery of tissue plasminogen activator: functional and pharmacokinetic studies of anterior segment delivery. *Refract Corneal Surg* **8**, 44-8; discussion 48-53.
- \*5. Burke, J. M., and **McKay, B. S.** (1993). In-Vitro Aging of Bovine and Human Retinal-Pigment Epithelium - Number and Activity of the Na/K Atpase Pump. *Experimental Eye Research* **57**, 51-57.
- \*6. Suson, J. D., Nash, R. W., **McKay, B. S.**, and Burke, J. M. (1993). Regional and Sodium-Dependent Variation in Atp and Sodium-Pump Number in RPE. *Investigative Ophthalmology & Visual Science* **34**, 872-872.
- \*7. **McKay, B. S.**, and Burke, J. M. (1994). Separation of Phenotypically Distinct Subpopulations of Cultured Human Retinal-Pigment Epithelial-Cells. *Experimental Cell Research* **213**, 85-92.

- \*8. Nash, R. W., **McKay, B. S.**, and Burke, J. M. (1994). The Response of Cultured Human Retinal-Pigment Epithelium to Hypoxia - a Comparison to Other Cell-Types. *Investigative Ophthalmology & Visual Science* **35**, 2850-2856.
9. Burke, J. M., Skumatz, C. M. B., Irving, P. E., and **McKay, B. S.** (1996). Phenotypic heterogeneity of retinal pigment epithelial cells in vitro and in situ. *Experimental Eye Research* **62**, 63-73.
10. **McKay, B. S.**, Annis, D. S., Honda, S., Christie, D., and Kunicki, T. J. (1996). Molecular requirements for assembly and function of a minimized human integrin alphaIIbbeta3. *Journal of Biological Chemistry* **271**, 30544-7.
11. **McKay, B. S.**, and Burke, J. M. (1997). Cell association increases RPE outgrowth from primary explant. *Current Eye Research* **16**, 891-9.
12. **McKay, B. S.**, Irving, P. E., Skumatz, C. M. B., and Burke, J. M. (1997). Cell-cell adhesion molecules and the development of an epithelial phenotype in cultured human retinal pigment epithelial cells. *Experimental Eye Research* **65**, 661-671.
13. Stamer, W. D., Bok, D., Hu, J., Jaffe, G. J., and **McKay, B. S.** (2003). Aquaporin-1 channels in human retinal pigment epithelium: role in transepithelial water movement. *Investigative Ophthalmology & Visual Science* **44**, 2803-8.
14. Yang, P., **McKay, B. S.**, Allen, J. B., Roberts, W., and Jaffe, G. J. (2003). Effect of Mutant Ikb on Cytokine-induced Activation of Nf-kB in Cultured Human RPE Cells. *Investigative Ophthalmology & Visual Science* **44**, 1339-1347.
15. Yang, P., **McKay, B. S.**, Allen, J. B., and Jaffe, G. J. (2004). Effect of NF-kappa B inhibition on TNF-alpha-induced apoptosis in human RPE cells. *Investigative Ophthalmology & Visual Science* **45**, 2438-2446.
16. Hardy, K. M., Hoffman, E. A., Gonzalez, P., **McKay, B. S.**, and Stamer, W. D. (2005). Extracellular trafficking of myocilin in human trabecular meshwork cells. *Journal of Biological Chemistry* **280**, 28917-28926.
17. Hoffman, E. A., Conley, S. M., Stamer, W. D., and **McKay, B. S.** (2005). Barriers to productive transfection of trabecular meshwork cells. *Molecular Vision* **11**, 869-875.
18. Conley, S. M., **McKay, B. S.**, Gandolfi, A. J., and Stamer, W. D. (2006). Alterations in human trabecular meshwork cell homeostasis by selenium. *Experimental Eye Research* **82**, 637-47.
19. McLaughlin, P. J., Chen, Q., Horiguchi, M., Starcher, B. C., Stanton, J. B., Broekelmann, T. J., Marmorstein, A. D., **McKay, B.S.**, Mecham, R., Nakamura, T., and Marmorstein, L. Y. (2006). Targeted disruption of fibulin-4 abolishes elastogenesis and causes perinatal lethality in mice. *Mol Cell Biol* **26**, 1700-9.
20. Rak, D. J., Hardy, K. M., Jaffe, G. J., and **McKay, B. S.** (2006). Ca<sup>++</sup>-switch induction of RPE differentiation. *Experimental Eye Research* **82**, 648-56.
21. **McKay B. S.**, Goodman B, Falk T, Sherman S. J. Retinal pigment epithelial cell transplantation could provide trophic support in Parkinson's disease: results from an in vitro model system. *Experimental Neurology* 2006;201 (1):234-43.
22. Stamer W. D, Perkumas K, Hoffman E. A, Roberts B. C, Epstein D. L, **McKay B. S.** Coiled-Coil Targeting of Myocilin to Intracellular Membranes. *Experimental Eye Research* 2006;83 (6):1386-95. Perkumas K, Hoffman EA,
23. Perkumas K, Hoffman E. A, **McKay B. S.**, Allingham R. R, Stamer W. D. Myocilin-Associated Exosomes in Human Ocular Samples *Experimental Eye Research* 2007;84 (1):209-12.
24. Bakall B, Radu R, Stanton J. B., Burke J.M, **McKay B. S.**, Wadelius C, Mullins R, Stone E, Travis G.H, Marmorstein A.D. Enhanced accumulation of A2E in individuals homozygous or



- heterozygous for mutations in BEST1 (VMD2). *Experimental Eye Research*. 2007 Jul;85(1):34-43.
25. Ling Y, Kelly U, Ebright J. N., Malek G, Saloupis P, Rickman D, **McKay B. S.**, Arshavsky V. Y., Bowes – Rickmana C. Oxidative Stress-Induced Expression and Modulation of Phosphatase of Regenerating Liver-1 (PRL-1) in Mammalian Retina. *Biochimica et Biophysica Acta (BBA) - Molecular Cell Research*. 2007. Sep;1773(9):1473-82.
  26. Lopez VM, Decatur CL, Stamer WD, Lynch RM, **McKay BS** L-DOPA is an endogenous ligand for OA1. *PLoS Biol* 2008 6(9): e236.
- Voted Faculty of 1000 Must Read.**
27. **McKay, B. S.**, Miller J. Macular Degeneration. Encyclopedia Britannica. 2008, updated 2014.
  28. Falk, T., N.R. Congrove, S.L. Zhang, A.D. McCourt, S.J. Sherman and **B.S. McKay** PEDF and VEGF-A output from human retinal pigment epithelium cells grown on novel microcarriers. 2012 *Journal of Biomedicine and Biotechnology*, 2012: 278932.
  29. Dismuke, W. M., **McKay, B. S.**, Stamer, W. D. Myocilin, a Component of a Membrane-Associated Protein Complex Driven by a Homologous Q-SNARE Domain. *Biochemistry* 2012 51 (17):3606-13.
  30. **McKay, B. S.**, Congrove, N. R., Johnson, A. A., Dismuke, W. M., Bowen, T.J., Stamer, W. D. A Role for Myocilin in Receptor-Mediated Endocytosis. *PLoS ONE* 2013. 8(12): e82301. doi:10.1371/journal.pone.0082301
  31. Summers, C. G., Connett, J. E., Holleschau, A. M., Anderson, J. L., De Becker, I., **McKay, B. S.**, and Brilliant, M. H. Does levodopa improve vision in albinism? Results of a randomized, controlled clinical trial. *Clinical & Experimental Ophthalmology* **42**, 713-721 (2014).
  32. Locke, C. J., Congrove, N. R., Dismuke, W. M., Bowen, T. J., Stamer, W. D., and **McKay, B. S.** Controlled exosome release from the retinal pigment epithelium in situ. *Experimental Eye Research* **129**. 1-4 (2014).
  33. Murray H. Brilliant, Kamyar Vaziri, Thomas B. Connor, Jr., Stephen G. Schwartz, Joseph J. Carroll, Catherine A. McCarty, Steven J. Schrodi, Scott J. Hebring, Krishna S. Kishor, Harry W. Flynn, Jr, Andrew A. Moshfeghi, Darius M. Moshfeghi, M. Elizabeth Fini, **Brian S. McKay**. Mining Retrospective Data for Virtual Prospective Drug Repurposing: L-DOPA and Age-related Macular Degeneration. *American Journal of Medicine*. 2016 Mar;129(3):292-8.
- Altmetric Ranking:** “Altmetric has tracked 4,845,947 research outputs across all sources so far. Compared to these this one has done particularly well and is in the 99th percentile: it's **in the top 5% of all research outputs ever tracked** by Altmetric.”
34. **McKay, B. S.** and Schwartz, S. G. Pigmentation and Macular Degeneration: Is There a Role for GPR143? *J Ocul Pharmacol Ther*. 2016 Jan-Feb;32(1):3-4. doi: 10.1089/jop.2016.29007.bsm.
  35. McKay, B.S., Allingham, R.R., Stamer, W.D. Is there a final common pathway in POAG? In Press
  36. McKay, B.S., Lynch, R., Stamer, W.D. Response to "Identification of Novel G Protein-Coupled Receptor 143 Ligands as Pharmacologic Tools for Investigating X-Linked Ocular Albinism. *Investigative Ophthalmology and Vision Science*, 2017 in press.

## Patent

**“Methods for Treating and Identifying Compounds to Treat Age-Related Macular Degeneration”** Inventor: McKay, Brian S. Patent: WO/2009/129497. Patent is granted in USA, EU, and Australia.

## Scholarly Presentations

### Invited Seminars:

“Myocilin Functions in the Secretory pathway” September 1999, Asheboro, North Carolina. Invited Speaker, Department of Cell Biology, Duke University Medical Center.

“Myocilin: a Molecular Address that Delivers Adhesion Molecules to Nascent Junctions” December 1999, Chapel Hill, North Carolina. Department of Cell Biology, Integrin Special Interest Group. University of North Carolina at Chapel Hill.

“Myocilin is a SNARE Associated Protein” April 2000, San Francisco, CA,. Glaucoma Research Foundation Catalyst Meeting.

“Autologous RPE transplantation for treatment of AMD and Parkinson’s Disease” Translational Research Seminar 2005, Arizona Board of Regents.

“Ca<sup>++</sup> Switch Induction of RPE Differentiation” May 2005. Association for Research in Vision and Ophthalmology, Ft. Lauderdale, FL Special Interest Group Panel

“Transplantation of RPE cells for disease Stem Cell Conference” April 2006 Stem Cell Conference, Tucson, AZ.

“OA1 function in Pigmentation and Disease” October, 2006. The Sunstone Healing Center, Tucson, AZ.

“RPE Cell Based Therapy for Parkinson’s Disease” 2008. Keynote Address, Annual Meeting of the American Parkinson’s Disease Association, Marriot Starr Pass Resort, Tucson, AZ, March, 2008. \_

“L-DOPA is the Endogenous Ligand of OA1” Invited Speaker, Annual meeting of the Vision of Children Foundation May 19, 2009, San Diego, Ca.

“L-DOPA is the endogenous Ligand for OA1” Plenary Address, The European Society for Pigment Cell Research. September 23, 2009. Muenster, Germany.

“Pigmentation and Vision: A Connection between the two most common causes of blindness” Invited Speaker, September 5, 2014. Hope for Vision Foundation, Miami, FL.

“Solving the Riddle of Pigmentation and Retinal Degeneration” University of Arizona Center on Aging March 18, Tucson, AZ.

### Symposia

“Molecular Basis of Glaucoma Studied through Myocilin Mutations” August, 2003. Inherited Eye Disease Symposia, Duke University

“Cell Based Therapies for the Treatment of Parkinson’s Disease” March 2008. Keynote Address. Power Over Parkinson’s Tucson Conference 3/08, Marriott Starr Pass Resort.

“Albinism and extracutaneous melanin” Session Chair. European Society for Pigment Cell Research. September 23, 2009. Muenster, Germany.

### Submitted Presentations (Abstracts)

1. **McKay, B. S.**, and J. M. Burke. 1991. Irradiated Feeder Layers Enhance Primary Outgrowth of RPE. *Investigative Ophthalmology & Visual Science* 32: 1303-1303.
2. **McKay, B. S.**, and J. M. Burke. 1992. Epithelialization of Human Retinal-Pigment Epithelium (RPE) Invitro. *Molecular Biology of the Cell* 3: A290-A290.
3. **McKay, B. S.**, J. D. Suson, and J. M. Burke. 1992. Subpopulations of Human RPE Invitro. *Investigative Ophthalmology & Visual Science* 33: 1204-1204.
4. **McKay, B. S.**, R. L. Sabina, and J. M. Burke. 1993. Amp-Deaminase Expression in Cultured Human Rpe. *Investigative Ophthalmology & Visual Science* 34: 983-983.

5. Nash, R. W., **B. S. McKay**, J. D. Suson, and J. M. Burke. 1993. RPE Sensitivity to Hypoxia *Invitro*. *Investigative Ophthalmology & Visual Science* 34: 869-869.
6. Suson, J. D., R. W. Nash, **B. S. McKay**, and J. M. Burke. 1993. Regional and Sodium-Dependent Variation in ATP and Sodium-Pump Number in RPE. *Investigative Ophthalmology & Visual Science* 34: 872-872.
7. **McKay, B. S.**, S. Honda, D. S. Annis, and T. J. Kunicki. 1995. Molecular Requirements for Species-Restricted Dimerization of Human Integrin Alpha(Iiib) with Beta(3). *Blood* 86: 2204-2204.
8. **McKay, B. S.**, D. S. Annis, S. Honda, D. Christie, and T. J. Kunicki. 1996. Molecular Requirements for Assembly and Function of a Human Alpha(Iib)Beta(3) Mini-Integrin. *Molecular Biology of the Cell* 7: 1435-1435.
9. Kunicki, T. J., and **B. S. McKay**. 1997. Molecular Requirements for Human Integrin Alpha Beta Subunit Association. *Blood* 90: 1909-1909.
10. **McKay, B. S.**, D. S. Annis, S. Honda, D. J. Christie, and T. J. Kunicki. 1997. Assembly of a Functional Human Alpha(Iib)Beta(3) Minigrin. *Thrombosis and Haemostasis*: P2744-P2744.
11. Stamer, W. D., B. C. Roberts, D. L. Epstein, and **B. S. McKay**. 1998. Myocilin Functions in Vesicle Formation and Fusion. *Molecular Biology of the Cell* 9: 206A-206A.
12. Denny, J. P., G. J. Jaffe, and **B. S. McKay**. 1999. The Effect of Tamoxifen on Cadherin Expression in Cultured Human Rpe. *Investigative Ophthalmology & Visual Science* 40: S924-S924.
13. **McKay, B. S.**, B. C. Roberts, and W. D. Stamer. 1999. Myocilin Functions in Cell-Cell Junction Formation. *Molecular Biology of the Cell* 10: 410A-410A.
14. **McKay, B. S.**, B. C. Roberts, and W. D. Stamer. 2000. Myocilin: A Molecular Address for Nascent Junctions. *Investigative Ophthalmology & Visual Science* 41: S843-S843.
15. **McKay, B. S.**, W. D. Stamer, and H. P. Erickson. 2000. Myocilin Is a Vamp-Associated Protein. *Molecular Biology of the Cell* 11: 116A-116A.
16. Stamer, W. D., R. R. Allingham, B. C. Roberts, and **B. S. McKay**. 2000. Subcellular Localization of Myocilin Mutants. *Investigative Ophthalmology & Visual Science* 41: S523-S523.
17. **McKay, B. S.**, H. P. Erickson, and W. D. Stamer. 2001. Myocilin: A Vesicle Tether in Retina and Rpe. *Investigative Ophthalmology & Visual Science* 42: S193-S193.
18. Rickman, C. B., **B. S. McKay**, T. O. Yarovinsky, and D. W. Rickman. 2001. Analysis of Proteins Encoded by Two Fovea-Associated Candidate Genes for Macular Dystrophies. *Investigative Ophthalmology & Visual Science* 42: S770-S770.
19. Hoffman, E. A., E. P. Ryan, **B. S. McKay**, and W. D. Stamer. 2002. Biochemical Analysis of Native and Recombinant Myocilin in Human Trabecular Meshwork Cells and Supermatants. *Investigative Ophthalmology & Visual Science* 43: U231-U231.
20. Lamb, L. E., J. D. Simon, and **B. S. McKay**. 2002. Coordinated Stimulation of Cell Junctions and Pigmentation in Human RPE Cells. *Investigative Ophthalmology & Visual Science* 43: U1303-U1303.
21. **McKay, B. S.**, W. Bao, and G. K. Klintworth. 2002. Expression of Recombinant Transforming Growth Factor Beta Inducible Protein in Insect Cells. *Investigative Ophthalmology & Visual Science* 43: U381-U381.
22. Stamer, W., G. J. Jaffe, and **B. S. McKay**. 2002. Expression of Aquaporin-1 Protein in Human Retinal Pigment Epithelium. *Investigative Ophthalmology & Visual Science* 43: U1302-U1302.
23. Yang, P., W. L. Roberts, J. B. Allen, **B. S. McKay**, and G. J. Jaffe. 2002. The Effect of Adenovirus-Mediated Civerexpression of Mutant I Kappa B on Il-I Beta-Induced Nf-Kappa B

- Activation in Cultured Human RPE Cells. *Investigative Ophthalmology & Visual Science* 43: U1291-U1291.
24. **McKay, B. S.** 2003. Tissue Specific Protein Expression in Cultured Adult Human Rpe. *Investigative Ophthalmology & Visual Science* 44: U76-U76.
  25. Yang, P., **B. S. McKay**, J. B. Allen, and G. J. Jaffe. 2003. Resistance to Tnf-Alpha-Induced Cell Death by Overexpressing Mutant I Kappa B in Human RPE Cells. *Investigative Ophthalmology & Visual Science* 44: U83-U83.
  26. Conley, S. M., **B. S. McKay**, and W. D. Stamer. 2004. Selenium Effects on Integrin Activity and Intracellular Signaling in Trabecular Meshwork Cells. *Investigative Ophthalmology & Visual Science* 45: U440-U440.
  27. Hardy, K. M., E. A. Hoffman, **B. S. McKay**, and W. D. Stamer. 2004. Biochemical Properties of Extracellular Myocilin. *Investigative Ophthalmology & Visual Science* 45: U188-U188.
  28. Hoffman, E. A., A. Poncius, **B. S. McKay**, and W. D. Stamer. 2004. Cell Cycle Synchronization and Transfection Efficiency of Human Trabecular Meshwork Cells. *Investigative Ophthalmology & Visual Science* 45: U443-U443.
  29. **McKay, B. S.**, E. Erbe, D. Rak, and S. Sherman. 2004. Pigmenting RPE Secrete Neurotrophic Agents. *Investigative Ophthalmology & Visual Science* 45: U310-U310.
  30. Rak, D. J., and **B. S. McKay**. 2004. Interaction between Oa1 and Beta-Arrestin. *Investigative Ophthalmology & Visual Science* 45: U191-U191.
  31. Stamer, W., D. J. Rak, and **B. S. McKay**. 2004. Coiled-Coil Interactions of Native Myocilin. *Investigative Ophthalmology & Visual Science* 45: U187-U187.
  32. Yu, L., U. Kelly, J. N. Ebright, G. Malek, **B. S. McKay**, and C. B. Rickman. 2004. Characterization of Prl-1, a Human Cone Photoreceptor Protein Tyrosine Phosphatase. *Investigative Ophthalmology & Visual Science* 45: U529-U529.
  33. Hoffman, E. A., S. M. Conley, **B. S. McKay**, and W. D. Stamer. 2005. Role of DNase I in Transfection Efficiency of Human Trabecular Meshwork Cells. *Investigative Ophthalmology & Visual Science* 46.
  34. Kelly, U. L., L. Yu, **B. S. McKay**, and C. B. Rickman. 2005. Characterization of the Cone Photoreceptor-Associated Protein, Fash3b. *Investigative Ophthalmology & Visual Science* 46.
  35. Whiting, C. J., D. J. Rak, and **B. S. McKay**. 2005. Neurotrophic Factor Secretion by Pigmenting RPE. *Investigative Ophthalmology & Visual Science* 46.
  36. Yu, L., U. Kelly, J. N. Ebright, G. Malek, **B. S. McKay**, and C. B. Rickman. 2005. Light Dependent Membrane Association of Prl-1, a Phosphatase Expressed in Cone Photoreceptors. *Investigative Ophthalmology & Visual Science* 46.
  37. Kinnick, T. R., J. B. Stanton, B. Bakall, **B. S. McKay**, and A. D. Marmorstein. 2006. Accumulation of Lipofuscin in Response to Phagocytosis of Photoreceptor Outer Segments in Fetal Human RPE Cells. *Investigative Ophthalmology & Visual Science* 47.
  38. Sherman, S. J., B. Goodman, T. Falk, and **B. S. McKay**. 2006. Retinal Pigment Epithelial Cell Transplantation Could Provide Trophic Support in Parkinson's Disease: Results from an in Vitro Model System. *Movement Disorders* 21: S400-S401.
  39. Yu, L., U. L. Kelly, J. N. Ebright, G. Malek, **B. S. McKay**, V. Y. Arshavsky, and C. Bowes-Rickman. 2006. Oxidative Stress-Induced Expression and Modulation of a Tyrosine Phosphatase Prl-1 in Retina *Investigative Ophthalmology & Visual Science* 47.
  40. Teeple, R. C., V. M. Lopez, and **B. S. McKay**. 2007. Endogenous OA1 is Distributed to the Apical Surface in RPE. *Investigative Ophthalmology & Visual Science* 48.
  41. Decatur, C. L., V. M. Lopez, W. D. Stamer, R. M. Lynch, and **B. S. McKay**. 2008. L-DOPA is the Endogenous Ligand for Oa1. *Investigative Ophthalmology & Visual Science* 49.
  42. Congrove NR, Decatur CL, Stanton JB, Marmorstein AD, **McKay BS** (2011) Characterization of Transgenic Mouse RPE Cultures. *Investigative Ophthalmology & Visual Science* 52.

43. **McKay, BS**, Congrove, NR, Dismuke, WD, Stamer, WD. (2013) A Role for Myocilin in Receptor Endocytosis. *Investigative Ophthalmology & Visual Science* 54.
  44. Bowen, TJ, Congrove, NR, Stamer, WD, **McKay, BS**. (2014) Myocilin Mutations Alter GPCR Endocytosis. *Investigative Ophthalmology & Visual Science* 55.
  45. Locke, CL, Congrove, NR, Stamer, WD, **McKay, BS**. (2014) Myocilin is constitutively released with exosomes from RPE *in situ*. *Investigative Ophthalmology & Visual Science* 55.
  46. Locke, CL, Dismuke WD, Stamer, WD, **McKay, BS** (2015) Effect of L-DOPA and Dopamine on exosome release from the RPE and Ciliary Body. *Investigative Ophthalmology and Vision Science* 56.
  47. Vaziri, K, Schwartz, SG, Connor, TB, Moshfegh, AA, Moshfeghi, DM, Kishor, KS, Flynn, HW, Carroll, J, Brilliant, MH, **McKay, BS**. Inverse Association Between L-DOPA and Age-Related Macular Degeneration. *Investigative Ophthalmology and Vision Science* 56.
- Press:** ARVO Press Room: Posted: 5/5/2015 Parkinson's treatment may protect against AMD. **VisionAware Blog** May 14, 2015. Can a Drug to Treat Parkinson's Disease Also Prevent AMD?

#### **SECTION IV: CURRICULUM VITAE (cont.)**

##### **Signed Statement by Candidate**

The candidate's signature should appear on the last page of the curriculum vitae with the following statement:

*This is a true and accurate statement of my activities and accomplishments. I understand that misrepresentation in securing promotion and tenure may lead to dismissal or suspension under ABOR Policy 6-201 J.1.b.*