

CURRICULUM VITAE

BIOGRAPHICAL

Name: Kyle Christopher McKenna **Birth Place:** Towson, Maryland
Citizenship: U. S. A.
Business Address: CODA 215 **e-mail:** kmckenna@franciscan.edu
1235 University Blvd.
Steubenville, OH 43952
Business Phone: 740-283-6765

EDUCATION AND TRAINING

UNDERGRADUATE:

1987-1991 University of Maryland, College Park, MD B. S., 1991 with Honors in Biology

GRADUATE:

1993-1999 University of Maryland, Baltimore, MD Ph. D. 1999 Immunology

POSTGRADUATE:

1999-2003 Emory University, Atlanta, GA Post-Doc Ocular Immunology

APPOINTMENTS and POSITIONS

ACADEMIC:

2003-2006	Emory University, Atlanta, GA	Asst. Prof. of Ophthalmology
2003-2006	Emory University, Atlanta, GA	Asst. Prof. of Microbiology and Immunology
2006 (Nov.)	University of Pittsburgh, Pittsburgh, PA	Visiting Asst. Prof. of Ophthalmology
2006-2014	University of Pittsburgh, Pittsburgh, PA	Asst. Prof. of Ophthalmology
2006-2014	University of Pittsburgh, Pittsburgh, PA	Asst. Prof. of Immunology
2010-2014	University of Pittsburgh Cancer Institute	Member
2012-2014	McGowan Institute for Regenerative Medicine	Member
2014-present	University of Pittsburgh, Pittsburgh PA	Adj. Associate Professor of Ophthalmology
2014-present	Franciscan University of Steubenville	Associate Professor of Biology

NON-ACADEMIC:

1991-1993 Abbott Laboratories, Abbott Park, IL Research Project Manager

CERTIFICATION AND LICENSURE

Controlled Substance Registration Certification
United States Department of Justice
Drug Enforcement Administration 2008 – present

MEMBERSHIP IN PROFESSIONAL AND SCIENTIFIC SOCIETIES

American Association of Immunologists	2000- 2014
Association for Research in Vision and Ophthalmology	2000-present

HONORS

Athletic Director's Scholar Athlete Award, University of Maryland, College Park	1987-1989
Senior Summer Scholarship, University of Maryland, College Park	1990
Omicron Delta Kappa, Sigma Circle, University of Maryland, College Park	1990
Travel Award, American Society for Tropical Medicine and Hygiene	1997
Ruth L. Kirschstein National Research Service Award (NRSA)	2000-2003

PUBLICATIONS

Refereed articles

1. Patterson G, **McKenna KC**, Lusby WR Bisson MA. Sterols of the Charophyceae. J Nat Prod. 1991 Jul-Aug;54:1141-3.
2. Jucker M, **McKenna K**, da Silva AJ, Rudd, CE, Feldman, RA. The Fes Protein-Tyrosine Kinase Phosphorylates a Subset of Macrophage Proteins That Are Involved in Cell Adhesion and Cell-Cell Signaling. J. Bio. Chem. 1997 Jan 24;272(4):2104-9. PubMed PMID: 8999909.
3. **McKenna KC**, Tsuji M, Sarzotti M, Sacci JB, Witney AA, Azad AF. gammadelta T-cells are a component of early immunity against pre-erythrocytic malaria parasites. Infect Immun. 2000 Apr;68(4):2224-30. PubMed PMID 10722623.
4. **McKenna KC**, Xu Y, Kapp JA. Injection of soluble antigen into the anterior chamber of the eye induces expansion and functional unresponsiveness of antigen-specific CD8⁺ T cells. J Immunol. 2002 Nov 15;169(10):5630-7. PubMed PMID 12421942.
5. Kapp JA, Kapp LM, **McKenna KC**, Lake JP. gammadelta T-cell clones from intraepithelial lymphocytes inhibit development of CTL responses ex vivo. Immunol. 2004 Feb;111(2):155-64. PubMed PMID 15027900.
6. Wen J, **McKenna KC**, Barron BC, Langston HP, Kapp JA. Use of superparamagnetic microbeads in tracking subretinal injections. Mol Vis. 2005 Apr15;11:256-62. PubMed PMID: 15851980.
7. **McKenna KC**, Anderson KM, Kapp JA. CD8+ T cell tolerance induced by delivery of antigen to the anterior chamber is not the result of de facto intravenous or mucosal administration of antigen. Ocul. Immunol Inflamm. 2005 Apr-Jun;13(2-3):149-57. PubMed PMID: 16019674.
8. **McKenna KC**, Kapp JA. Accumulation of immunosuppressive CD11b+ myeloid cells correlates with the failure to prevent tumor growth in the anterior chamber of the eye. J Immunol. 2006 Aug 1;177(3):1599-608. PubMed PMID: 16849468.
9. **McKenna KC**, Beatty KM, Vicetti Miguel RD, Bilonick RA. Delayed processing of blood increases the frequency of activated CD11b+ CD15+ granulocytes which inhibit T cell function. J Immunol Meth. 2009 Feb28;341(1-2):68-75. PubMed PMID: 19041316.
10. **McKenna KC**, Beatty KM, Bilonick RA Singh AD. Activated CD11b+ CD15+ Granulocytes Increase in Blood of Uveal Melanoma Patients. Invest Ophthalmol Vis Sci. 2009 Sep;50(9):4295-303. PubMed PMID: 19369244.
11. Vicetti Miguel RD, Cherpes TL, Watson LJ, **McKenna KC**. CTL Induction of Tumoricidal Nitric Oxide Production by Intratumoral Macrophages Is Critical for Tumor Elimination. J Immunol. 2010 Dec 1;185(11):6706-18. PubMed PMID: 21041723.

12. **McKenna KC**, Vicetti Miguel RD, Beatty KM, Bilonick RA. A caveat for T cell transfer studies: generation of cytotoxic anti-Thy 1.2 antibodies in Thy 1.1 congenic mice given Thy 1.2+ tumors or T cells. *J Leukoc Biol.* 2011 Feb;89(2):291-300. PubMed PMID: 2059413.
13. Gabriele Sandrian, M., Wollstein, G., Schuman, J.S., Bilonick, R.A., Ling Y. Ishikawa, H., Kagemann, L., and **McKenna K.C.** Inflammatory Response to Intravitreal Injection of Gold Nanorods. *Br. J. Ophthalmol.* 2012;96(12):1522-1529. PubMed PMID: 23087415.
14. **McKenna, K.C.**, , Beatty, K.M. Scherder, R.C., Li F., Liu, H., Chen, A.F., Ghosh, A. and Stuehr D. Ascorbate in Aqueous Humor Augments Nitric Oxide Production by Macrophages. *J. Immunol.* 2013 Jan 15;190(2):556-64. PubMed PMID: 23241881.
15. Hernandez-Santoz, N. Huppler A. R., Peterson, A. C., Khader S. A., **McKenna, K. C.**, Gaffen S. L. Th17 cells confer long term adaptive immunity to oral mucosal *Candida albicans* infections. *Mucosal Immunol.* 2012 Dec 19. doi: 10.1038/mi.2012.128. [Epub ahead of print]. PubMed PMID: 23250275.
16. Gopal R., Monin L., Torres D., Slight S., Mehra S., **McKenna KC**, Fallert Junecko, B. A., Reinhart T. A., Kolls, J., Baez Saldana, R., Cruz-Lagunas, A., Rodriquez-Reyna, T. S., Pavan Kuman, N., Tessier P., Roth J., Selman, M., Becerril-Villanueva E., Baquera-Heredia, J. Cumming B., Ksaprowicz, V. O., Steyne A., Babu, S., Kaushal, D., Zuniga J., Vogl, T., Rangel-Moreno J., Khader, S. A. S100A8/A9 proteins mediate neutrophilic inflammation and lung pathology during tuberculosis. Accepted 8-27-2013. *American Journal of Respiratory and Critical Care Medicine-Blue-201304-0803OC*
17. Miller, M.R., Mandel, J.B., Beatty, K. M., Harvey, S., Rizzo, M., Previte, D. M., Thorne, S. H., **McKenna, K.C.** Splenectomy promotes indirect elimination of intraocular tumors by CD8+ T cells that is associated with IFN γ - and Fas/FasL-dependent activation of intratumoral macrophages. *Cancer Immunol. Res.* 2014 Dec; 2(12):1175-85. Pubmed PMID: 25248763.

Reviews, invited published papers, proceedings of conference and symposia, monographs, books, and book chapters.

1. **McKenna KC**, Briones MRS. Quantitation of liver-stage parasites by competitive RT-PCR. In *Malaria Methods and Protocols. Methods in Molecular Medicine™*. 2002; 72:141-50. Humana Press, Inc. Totowa, NJ. ISBN 0-89603-823-8.
2. Kapp JA, Kapp LM, **McKenna KC**. gammadelta T cells play an essential role in several forms of tolerance. *Immunol Res.* 2004 Feb;111(2):155-164. PubMed PMID: 15181273.
3. **McKenna KC**, Kapp JA. Ocular Immune Privilege and CTL tolerance. *Immunol Res.* 2004;29(1-3):93-102. PubMed PMID: 15181274.
4. **McKenna KC**, Vicetti Miguel RD. Adaptive Immune System and the Eye: T Cell-Mediated Immunity. *Encyclopedia of Eye.* 2010;1:41-7. Elsevier Ltd.
5. **McKenna KC**, Chen, PW. Influence of immune privilege on ocular tumor development. *Ocul. Immunol Inflamm.* 2010 Apr;18(2):80-90. PubMed PMID: 20370332.
6. **McKenna KC** , Previte DM. Influence of CD8+ T regulatory cells on intraocular tumor development. *Front. Immunol.* 2012;3:303. PubMed PMID: 3060881.
7. Proceedings of the Society for Melanoma Research Workshop: Emerging Research in Uveal Melanoma and Implications for Treatment: Current Status and Future Directions. 2014. *J. Clin. Cancer Res.*

Published Abstracts

1. **McKenna KC**, M Tsuji, M Sarzotti, Azad AF. Increased Liver-Stage Malaria Parasite Burden In Naive gammadelta T-cell Depleted C57Bl/6 Mice. 46th Annual Meeting of the American Society of Tropical Medicine and Hygiene, Orlando, Florida, December 7-11. Am J Trop Med Hyg. 1997 57:21.
2. **McKenna KC**, Tsuji M, Sarzotti M, Azad AF. Malaria Liver-Parasite Burden In Naive gamma deltaT-cell Deficient Mice. 2nd Woods Hole Immunoparasitology Meeting. Woods Hole, MA. April 26-29, 1998
3. **McKenna KC**, M Tsuji, M Sarzotti, Azad AF. gammadeltaT-cells are a component of innate immunity against malaria pre-erythrocytic parasites in C57Bl/6 mice. 47th Annual Meeting of the American Society of Tropical Medicine and Hygiene. San Juan, Puerto Rico. October 18-22. Am J Trop Med Hyg. 1998 59:183.
4. Wachman JR, Lake JP, Kapp LM, Zimring JC, Man HL, **McKenna KC**, Kapp JA. Split T cell tolerance in TRP-1-OVA transgenic mice. Annual Meeting of the Association for Research in Vision and Ophthalmology, Fort Lauderdale, FL. Invest Ophthalmol Vis Sci. 2000 Mar 15;41(4):S856
5. **McKenna KC**, Xu Y Kapp JA. Visualization of antigen-specific CD8⁺ T cells in anterior chamber associated immune deviation (ACAID). Experimental Biology 2001®, Orlando, FL, March 31 – April 4. FASEB J. 2001 Mar 7;15(4):A348.
6. Wajchman JR, Lake JP, Kapp LM, Zimring JC, Ma HL, **McKenna KC** Kapp JA. Split T cell tolerance in TRP-1-OVA transgenic mice. Experimental Biology 2001®, Orlando, FL, March 31 – April 4. FASEB J. 2001 Mar 7;15(4):A669.
7. **McKenna KC**, Kapp LM, Liu J, and Kapp JA. Phenotypic characterization of IEL gammadelta T cell clones exhibiting regulatory activity. Experimental Biology 2001®, Orlando, FL, March 31 – April 4, FASEB J. 2001 Mar 7;15(4):A351.
8. **McKenna KC**, Xu Y and J. A. Kapp. Visualization of antigen-specific CD8⁺ T cells in anterior chamber associated immune deviation (ACAID). Annual Meeting of the Association for Research in Vision and Ophthalmology, Fort Lauderdale, FL, April 29 – May 4. Invest Ophthalmol Vis Sci. 2001 Mar 15;42(4):S523.
9. **McKenna KC**, Kapp JA. Injection of soluble but not tumor-cell-associated antigens into the anterior chamber of the eye inhibits antigen-specific CTL responses. Annual Meeting of the Association for Research in Vision and Ophthalmology, Fort Lauderdale, FL, May 5 – May 10. Invest Ophthalmol Vis Sci. 2002 43:U835.
10. **McKenna KC**, Kapp JA. Simultaneous enumeration of ocular tumor cells and tumor infiltrating lymphocytes by flow cytometry. Annual Meeting of the Association for Research in Vision and Ophthalmology, Fort Lauderdale, FL, May 4 – May 9. Invest Ophthalmol Vis Sci. 2003 44:U223.
11. **McKenna KC**, Xu Y, Kapp JA. Injection of soluble antigen into the anterior chamber of the eye induces expansion and functional unresponsiveness of antigen-specific CD8⁺ T cells. Keystone Symposia. Mechanisms of Immunologic Tolerance and its Breakdown. Snowbird, UT. Jan 7-13, 2003.
12. **McKenna KC**, Anderson KM, Kapp JA. Gamma delta T cells are required for infectious CTL tolerance. Keystone Symposia. Regulatory/ Suppressor T cells. Banff, Alberta. Mar 10-15, 2004.
13. **McKenna KC**, Kapp JA. Immune evasion by ocular tumors. Keystone Symposia. Immune Evasion. Taos, NM. Mar 25-30, 2004.

14. Wen J, **McKenna KC** Kapp JA. Characterization of the inflammatory response to retinal pigment epithelial cell transplants in allogeneic recipients. Annual Meeting of the Association for Research in Vision and Ophthalmology, Fort Lauderdale, FL, April 25 – 29. Invest Ophthalmol Vis Sci. 2004 45:U604.
15. **McKenna KC**, Kapp JA. Immune evasion by ocular tumors. Annual Meeting of the Association for Research in Vision and Ophthalmology, Fort Lauderdale, FL, April 25 – 29. Invest Ophthalmol Vis Sci. 2004 45:U459.
16. **McKenna KC**, Kapp JA. CD8+ T cell tolerance induced by delivery of antigen to the anterior chamber is not the result of de facto intravenous or mucosal administration of antigen. Annual Meeting of the Association for Research in Vision and Ophthalmology, Fort Lauderdale, FL, May 1 – 5. Invest Ophthalmol Vis Sci. 2005 46:1048.
17. **McKenna KC** Kapp JA. Immunosuppressive CD11b+ myeloid cells accumulate within the eye during tumor growth in the anterior chamber. Keystone Symposia. Tolerance, autoimmunity, and immune regulation (D1) Breckenridge, CO. Mar 21-26, 2006.
18. Culp WD, **McKenna KC**, Mooney D, Meyer E, Pisa P, Garland D. RNA interference of macrophage migration inhibitory factor in B16-F10 mouse melanoma cells delays tumor establishment. Annual Meeting of the Association for Research in Vision and Ophthalmology, Fort Lauderdale, FL, April 30 – May 4. Invest Ophthalmol Vis Sci. 2006 47:5163.
19. **McKenna KC**, Kapp JA. Immunosuppressive CD11b+ myeloid cells accumulate within the eye during tumor growth in the anterior chamber. Annual Meeting of the Association for Research in Vision and Ophthalmology, Fort Lauderdale, FL, April 30 – May 4. Invest Ophthalmol Vis Sci. 2006 47:5162.
20. **McKenna KC** Nitric Oxide promotes tumor growth in the anterior chamber of the eye. Molecular Targets in Cancer Therapy, Fourth Biennial Meeting: Mechanism and Therapeutic Reversal of Immune Suppression in Cancer, Clearwater Beach, FL, January 25-28-2007.
21. **McKenna KC**, L Watson, Lin E, Meltzer M, Edwards L. Ocular Tumor Associated CD11b+ Myeloid Cells Inhibit CD8+ CTL Responses via Nitric oxide Production. Annual Meeting of the Association for Research in Vision and Ophthalmology, Fort Lauderdale, FL, May 5 – May 10. Invest Ophthalmol Vis Sci. 2007 48:1009.
22. **McKenna KC**, Beatty KM Established Tumors developing in the anterior chamber induce depletion of effector CD8+ CTL in lymphoid tissues. Annual Meeting of the Association for Research in Vision and Ophthalmology, Fort Lauderdale, FL, May 5 – May 10. Invest Ophthalmol Vis Sci 2008 49:2522.
23. **McKenna KC**, Beatty KM, Bilonick RA, Singh AD. Expansion of Activated CD11b+ CD15+ Granulocytes in Blood of Uveal Melanoma Patients Correlates with Reduced CD3 zeta chain Expression. Molecular Targets for Cancer Therapy: Fifth Biennial Meeting. Clearwater Beach, Florida March 12-15, 2009.
24. Vicetti Miguel RD, Beatty KM, **McKenna KC**. Failure of CTL to Control Ocular Tumors is Associated with Intratumoral CD11b+ GR-1+ MDSC AND Reduced Intratumoral F4/80+ Macrophages That Demonstrate Impaired Tumoricidal Activity. Molecular Targets for Cancer Therapy: Fifth Biennial Meeting. Clearwater Beach, Florida March 12-15, 2009.
25. **McKenna KC**, Beatty KM, Bilonick RA, Singh AD. Activated CD11b+ CD15+ granulocytes increase in blood of uveal melanoma Patients. Annual Meeting of the Association for Research in Vision and Ophthalmology, Fort Lauderdale, FL May 3 – 7. Invest Ophthalmol Vis Sci 2009 50:3392.

26. Vicetti Miguel R. D., K. M. Beatty, and **K. C. McKenna**. Failure of CTL to Control Ocular Tumors is Associated With Reduced Intratumoral F4/80+ Macrophages That Demonstrate Impaired Tumoricidal Activity. Annual Meeting of the Association for Research in Vision and Ophthalmology, Fort Lauderdale, FL May 3 – 7. Invest Ophthalmol Vis Sci. 2009 50:5931.
27. Vicetti Miguel RD, Cherpes TL, **McKenna KC**. 2010. Impaired Tumoricidal activity of macrophages contributes to the failure of CD8+ CTL to control ocular tumor development. Keystone Symposia. Molecular and Cellular Biology of Immune Escape in Cancer (J6). Keystone, CO. February 7-12, 2010.
28. Gabriele ML, **McKenna KC**, Schuman JS, Ishikawa H, Franks J, Sun M, Halfter W, Kagemann L, Wollstein G. Distribution of Gold Nanorods Monitored with Spectral Domain Optical Coherence Tomography (SD-OCT) After Intravitreal Injection. Annual Meeting of the Association for Research in Vision and Ophthalmology. Ft. Lauderdale, FL. May 2-6. Invest Ophthalmol Vis Sci 2010 51:420.
29. **McKenna KC**, Beatty KM, Singh AD. Uveal Melanoma Patients With Increased Percentages of CD11b+ CD15+ Myeloid Derived Suppressor Cells in Blood Demonstrate Impaired T cell Function. Annual Meeting of the Association for Research in Vision and Ophthalmology. Ft. Lauderdale, FL. May 2-6. Invest Ophthalmol Vis Sci. 2010 51:843.
30. Wollstein G, Gabriele ML, **McKenna KC**, Ishikawa H, Kim JS, Bilonick RA, Kagemann L, Schuman JS. Optic Nerve Crushed Mice Followed Longitudinally With Spectral Domain Optical Coherence Tomography (SD-OCT). Annual Meeting of the Association for Research in Vision and Ophthalmology. Ft. Lauderdale, FL. May 2-6. Invest Ophthalmol Vis Sci. 2010 51:4802.
31. Vicetti Miguel RD, Cherpes TL, **McKenna KC**. Aqueous humor selectively inhibits inducible nitric oxide synthase (NOS2) activity in intratumoral macrophages through a post-translational mechanism. Annual Meeting of the Association for Research in Vision and Ophthalmology. Ft. Lauderdale, FL. May 2-6. Invest Ophthalmol Vis Sci. 2010 51:5167.
32. Sandrian MG, **McKenna KC**, Bilonick RA, Ling Y, Schuman JS, Ishikawa H, Kagemann L, Wollstein G. Inflammatory Response after Intravitreal Gold Nanorod Injection. Annual Meeting of the Association for Research in Vision and Ophthalmology. Ft. Lauderdale, FL. May 1-5. Invest Ophthalmol Vis Sci. 2011 52:432.
33. Bilonick RA, **McKenna KC**. Modeling the Correlation Structure of Longitudinal Data Using the Variogram. 2011 Annual Meeting of the Association for Research in Vision and Ophthalmology. Ft. Lauderdale, FL. May 1-5. Invest Ophthalmol Vis Sci. 2011 52:2804.
34. **McKenna KC**, Beatty KM. Immune Mechanisms of Ocular Tumor Rejection In Splenectomized Mice. Annual Meeting of the Association for Research in Vision and Ophthalmology. Ft. Lauderdale, FL. May 1-5. Invest Ophthalmol Vis Sci. 2011 52:2922.
35. **McKenna KC**, Beatty KM, Previte DM, Rizzo M, Sikorski R and Stephen Thorne. Splenectomy restores tumoricidal activity of CD8+ T cells and macrophages in ocular tumors. Annual Meeting of the Association for Research in Vision and Ophthalmology May 6-10, 2012.
36. **McKenna KC**, Beatty KM, and Stephen Thorne. Splenectomy restores tumoricidal activity of CD8+ T cells to promote rejection of intraocular tumors by a mechanism requiring macrophages and FasL. The American Association of Immunologists (AAI) Annual Meeting. Honolulu, HI May 3-7, 2013.
37. Miller, M.R., Mandell, J.B., Harvey, S., Beatty, K. M., Rizzo, M. J., Previte, D. M., Thorne, S. H. and **McKenna, K. C.** Spontaneous Intraocular Tumor Regression Requires CD8+ T cells, IFN γ , CD178FasL, and nontumor stroma expression of IFN γ R1 and CD95Fas. Annual Meeting of the Association for Research in Vision and Ophthalmology May 4-8, 2014.

PROFESSIONAL ACTIVITIES

TEACHING:

Courses, Lectures, and Seminars

Franciscan University of Steubenville

Course	Students (number)	Role	Years Inclusive	Lectures (hours)
Anatomy and Physiology I	Undergraduate (40)	Course Director	2014 - present	45 hours
Anatomy and Physiology II	Undergraduate (40)	Course Director	2015 - present	45 hours
Medical Microbiology	Undergraduate (12)	Course director	2014 -present	45 hours
Survey of Biology	Undergraduate (40)	Course Director	2015 - present	45 hours
Sophomore Seminar	Undergraduate (3)	Course Director	2015-present	15 hours
Special Topics in Biology	Undergraduate (6)	Mentor	2014-present	90 hours

University of Pittsburgh

Course	Students (number)	Role	Years Inclusive	Lectures (hours)
Scientific Basis of Vision	Graduate (4) Ophthalmology Residents (12)	Lecturer	Summer 2009-present	"Ocular Immune Responses" (1 hour)
Comprehensive Immunology	Graduate (15-20)	Lecturer	Spring 2007-2010	"T cell memory" (1 hour)
Comprehensive Immunology	Graduate (15-20)	Lecturer	Spring 2012-2014	"Complement"
Experimental Immunology	Graduate (15-20)	Lecturer	Spring 2007 – 2014	"Immune Privilege" (2 hours)
Experimental Immunology	Graduate (15-20)	Co-course director	Spring 2011 – 2014	Facilitator for paper discussions (15 hours)
Biology of Health and Disease	Medical	PBL author	Spring 2009 - 2014	"Victor's Vision Problem" Age related macular degeneration
Biology of Health and Disease	Medical (8)	PBL Facilitator	Spring 2009- 2014	"Victor's Vision Problem" Age related macular degeneration (3 hours)
Biology of Health and Disease	Medical (8)	PBL Facilitator	Spring 2013	"Joanne's Multiple Medical Problems that won't get better"
Fuel Metabolism PBL	Medical (8)	PBL Facilitator	Spring 2010	"Fuel Metabolism" (4 hours)
Methods in Logic and Ophthalmology	Ophthalmology Residents (12)	Co-course director	Spring 2009 – 2012	Advisor for scholarly projects (8 hours)

Emory University

Course	Students (number)	Role	Years Inclusive	Lectures (hours)
Biology of the Eye	Undergraduate (30)	Lecturer	2002-2006	"Ocular Immune Privilege" (1.25 hours)
Concepts in Immunology	Graduate (10-15)	Lecturer	2004-2006	"T regulatory Cells" (1 hour)

Colloquium in Immunology	Graduate (8-10)	Co-course director	2005-2006	Facilitator for paper discussions (16-20 hours)
Undergraduate Research	Undergraduate (1)	Advisor	2005-2006	Undergraduate Research advisor

Association for Research in Vision and Ophthalmology

Course	Participants	Role	Years Inclusive	Lectures (hours)
ARVO Education Course Targeted Molecular Therapies for Ocular Tumors	61	Co-course director/ Lecturer	2010	"Immune Evasion by Uveal Melanoma" (0.5 hours) Full Day Course

Mentored Research

Undergraduate Research Advisor

Franciscan University of Steubenville

Kathleen Lamontagne	Fall/Spring 2014-2015
Joseph Lamontagne	Fall/Spring 2014-2015
Benjamin Cahill	Spring 2015
Jessica Andersen	Spring/Summer 2015
Brooke Whitehill	Spring/Summer 2015
Naomi Sebastian	Spring 2015

University of Pittsburgh

Nathan Scherder (University of Pittsburgh)	Summer 2006, BS Pitt 2010
Lauren Patuschka (West Virginia University)	Summer 2008
Rebecca Scherder (University of Pittsburgh)	Summer 2011
Leah Kaercher (Franciscan University)	Summer 2011
Maria Munsch (University of Pittsburgh)	Fall/Spring 2012
Patrick Cotter (University of Pittsburgh)	Summer 2013
William Garrison (Northwestern University)	Summer 2013

Emory University

Tiffany Sheu	B.S. 2006 Magna cum laude
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Medical Resident Scholarly Project Advisor

University of Pittsburgh

Rachel Davis	Ophthalmology Resident
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Thesis Committees

University of Pittsburgh

Jared Knickelbein (Robert L Hendricks, advisor)	Ph. D. 2008
Michelle Gabrielle (Joel Schuman, advisor)	Ph. D. 2011
Tao Sun (Joanne Flynn, advisor)	M.S. 2012
Nydiaris Hernandez-Santos (Sarah Gaffen, advisor)	Ph. D. 2012
Jerry Zhou (Robert Binder, advisor)	Ph. D. 2014
Sophia Jeon (Robert L Hendricks, advisor)	Ph. D. 2013

Emory University

Molly Freeman (Kirk Ziegler, advisor)	Ph. D. 2005
Carrie Beal (Brian Evavold, advisor)	Ph. D. 2006

Leiden University (The Netherlands)

Long Ly (Martine Jager, advisor)	Ph. D. cum laude 2011
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University of Texas, Southwestern Medical School in Dallas

Terry Coursey (Jerry Niederkorn, advisor)	Ph. D. 2012
Leila Sadegh	Ph. D. 2014

Ph. D Student Laboratory Rotations***University of Pittsburgh***

Meghan Delmastro	2007
Aparna Rao	2008
Rodolfo Vicetti Miguel	2008
Halin Bareke	2009
Michael Rizzo	2009
Dana Previte	2011

Emory University

Kimberly Anderson	2003
Luke Uebelhoer	2004
Lyndsay Edwards	2005
Eugene Lin	2005

American Association of Immunologist's High School Teacher Summer Research Program Mentor***University of Pittsburgh***

Jared Rashford, Ph.D. (Winchester Thurston Academy)	Summer 2012
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High School Student Research Advisor***University of Pittsburgh Cancer Institute Summer Academy***

Iodwu Olugbade	Summer 2013
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RESEARCH:***Current Grant Support:***

Grant Number	Grant Title	Role in Project (% Effort)	Years Inclusive	Source of Support/ Total Direct and Indirect Amount
Developmental Research Award	Influence of BAP-1 Deficiency in Uveal Melanoma on Macrophage Phenotype	PI	2012-2015	NIH/NCI Directs: \$42,000

Prior Grant Support:

Grant Number	Grant Title	Role in Project (% Effort)	Years Inclusive	Source of Support/ Total Direct and Indirect Amount
T32 EY07092	Multidisciplinary training in vision and research	Trainee Edelhauser H director	1999-2000	NIH/NEI
F32 EY07079	Visualization of antigen-specific T cells in ACAID	PI Kapp JA mentor	2000-2003	NIH/NEI
None	Mechanisms of Immune Evasion by Ocular Tumors	PI	2004-2005	Knights Templar Educational Foundation-Georgia Directs: \$20,000 Indirects: 0
None	Mechanisms of CD8+ CTL inhibition by CD11b+ cells associated with primary ocular tumors	PI	2006	Emory University Research Council Directs: \$30,000 Indirects: 0
R03 EY016110	Experimental Uveal Melanoma and Ocular Immune Privilege	PI	2006-2008	NIH/NEI Directs: \$100,000 Indirects: \$51,000

R21 EY019092	Nanoparticles as OCT Contrast Agent	Co-investigator (10%)	2009-2011	NIH/NEI Directs: \$250,000 Indirects: \$127,500
R01 EY01835 5	Mechanisms of Immune Evasion by Ocular Tumors	PI (80%)	2008-2014	NIH/NEI Directs: \$1,250,000 Indirects: \$637,500

Seminars and invited lectureships

1. "Increased Liver-Stage Malaria Parasite Burden In Naive gammadelta T-cell Depleted C57Bl/6 Mice." 46th Annual Meeting of the American Society of Tropical Medicine and Hygiene, Orlando, Florida, December 8, 1997.
2. "Malaria Liver-Parasite Burden In Naive gamma deltaT-cell Deficient Mice." 2nd Woods Hole Immunoparasitology Meeting. Woods Hole, MA. April 28, 1998.
3. "Visualization of antigen-specific CD8⁺ T cells in anterior chamber associated immune deviation (ACAID). Annual Meeting of the Association for Research in Vision and Ophthalmology, Fort Lauderdale, FL, April 29 – May 4, 2001.
4. "Injection of soluble but not tumor-cell-associated antigens into the anterior chamber of the eye inhibits antigen-specific CTL responses." Annual Meeting of the Association for Research in Vision and Ophthalmology, Fort Lauderdale, FL, May 5 – May 10, 2002.
5. "Consequences of Immune Privilege. In vivo models of immune evasion by tumors developing within the eye." National Eye Institute. Bethesda, MD. November 18, 2004.
6. "CD8⁺ T cell tolerance induced by delivery of antigen to the anterior chamber is not the result of de facto intravenous or mucosal administration of antigen." Annual Meeting of the Association for Research in Vision and Ophthalmology, Fort Lauderdale, FL, May 1 – 5, 2005.
7. "Mechanisms of CD8⁺ CTL Inhibition to Ocular Antigens" Casey Eye Institute, Oregon Health and Science University, Portland, OR. August 18, 2005
8. "Immune Suppression by CD11b⁺ Myeloid Cells Associated With Primary Ocular Tumors" University of Pittsburgh, Department of Ophthalmology. Pittsburgh, PA. August 16, 2006.
9. Ocular Tumor Associated CD11b⁺ Myeloid Cells Inhibit CD8⁺ CTL Responses via Nitric oxide Production. Hot Topics in Microbiology and Immunology. Annual Meeting of the Association for Research in Vision and Ophthalmology, Fort Lauderdale, FL, May 5 – May 10, 2007.
10. "Issues in Tumor Microenvironment." ARVO Educational Course, "Ocular Tumors: Emerging Scientific Concepts" Ft. Lauderdale, FL. May 5, 2007
11. "Mouse Model of Tumors Growing In An Immunoprivileged Site" University of Pittsburgh Cancer Institute, C13 Symposium on Mouse Models for Cancer and Immunotherapy, Pittsburgh, PA. December 15, 2007.
12. Immune suppression by Ocular Tumor Associated CD11b⁺ myeloid cells: Implications for ocular tumor immunotherapy. International Congress of Ocular Oncology. Sienna, Italy. June 27- May 30, 2007.
13. "Differential Effects of Using Antigen-Presenting Cells." ARVO Cosponsored symposium, "How does Immunology Help In Treating Our Uveal Melanoma Patients ?." Annual Meeting of the American Academy of Ophthalmology. Atlanta, GA. November 11, 2008.

14. "Mechanisms of Immune Evasion by Ocular Tumors." International Society of Ocular Oncology. Cambridge, U. K. September 3, 2009.
15. "Hidden in Plain Sight: Mechanisms of Immune Evasion by Ocular Tumors." Washington University Vision Science Seminar Series, St. Louis, MO, October 15, 2009.
16. "Impaired Tumoricidal activity of macrophages contributes to the failure of CD8+ CTL to control ocular tumor development." Keystone Symposia. Molecular and Cellular Biology of Immune Escape in Cancer (J6). Keystone, CO. February 10, 2010.
17. "Immune Evasion by Uveal Melanoma." ARVO Educational Course "Targeted Molecular Therapies for Ocular Tumors." Ft. Lauderdale, FL May 1, 2010.
18. "Immune Response to Ocular Tumors." Annual PA Lions Research Seminar. Pennsylvania College of Optometry at Salus University, Elkins Park Campus. October 2, 2010.
19. "Mechanisms of Immune Evasion by Ocular Tumors." University of Leiden, Leiden University Medical Center, The Netherlands. Department of Ophthalmology Seminar Series. April 12, 2011.
20. "CD8+ T cells in ocular tumors: Friends or Foes?." University of Pittsburgh, Immunology Seminar Series. June 2, 2011.
20. "No Nos (NITRIC OXIDE SYNTHASE ACTIVITY) in Ocular Tumor Development." University of Texas, Southwestern Medical School in Dallas. Department of Ophthalmology Seminar Series. July 13, 2011.
21. "Post-translational Regulation of Inducible Nitric Oxide Synthase by Aqueous Humor." University of Pittsburgh, Immunology Department Faculty Retreat. October 21, 2011.
22. "Immune Evasion by Uveal Melanoma" ARVO Educational Course. Ft. Lauderdale, FL. May 5, 2012
23. "Influence of Immune Privilege on Intraocular Tumor Development: Implications for Immunotherapy." SPOREs in Skin Cancer Summer Workshop. Yale University. New Haven, CT. July 28, 2012.
24. "Exploiting the immune response to halt progression of ocular melanoma." ARVO@EVER(European Vision and Eye Research Annual Meeting): Translating ocular immunology from the laboratory to the clinic. Nice, France. October 13, 2012.
25. "Influence of Ocular Immune Privilege on Immune Surveillance of Intraocular Tumors" Society for Melanoma Research Meeting. Philadelphia, PA. October 17, 2013.
26. Consequences of Immune Privilege: Impaired Immunosurveillance of Intraocular Tumors. Department of Ophthalmology and Visual Sciences Seminar Series. Case Western Reserve University, Cleveland, OH. October 14, 2014.

Other research related activities:***Journal Refereeing***

BMC Immunology	Current Eye Research
Cytokine	Immunology
Investigative Ophthalmology and Visual Science	Journal of Immunology
Melanoma Research	Microbes and Infection
Molecular Vision	Journal of Leukocyte Biology

Extra-mural grant reviewing

Ad-hoc reviewer, British Eye Research Foundation (Fight for Sight)	December, 2010
Ad-hoc reviewer, Anterior Eye Disease Study Section, National Eye Institute	October, 2011
Ad-hoc reviewer, Fight for Sight Foundation (USA)	May 2013
Ad-hoc reviewer, UPCTSI BaCCoR program	January 2014

Research Interests:

The primary focus of the McKenna laboratory is the influence of immune privilege on ocular tumor development. A mouse model is utilized in which immunogenic tumors transplanted in the anterior chamber of the eye grow progressively whereas they are rejected when placed in the skin. Interestingly, ocular tumor growth does not induce systemic CD8+ T cell tolerance but rather primes for tumor-specific CD8+ cytolytic T cell (CTL) responses. Similar to primary human uveal melanomas, ocular tumors in this mouse system grow progressively despite significant infiltration with CD8+ CTL making this model ideal for understanding how CD8+ T cell responses are inhibited within an ocular tumor microenvironment. Findings from this mouse model of ocular tumor development are directly related to specimens from uveal melanoma patients to confirm relevance to the human disease and accelerate translation of his results into the clinic.

Other research interests include post-translational regulation of nitric oxide synthase-2 enzymatic activity in ocular tumor associated macrophages and the influence of BAP1 deficiency in primary human uveal melanomas on immune evasion and metastasis.

SERVICE:**Franciscan University of Steubenville**

Institutional Animal Care and Use Committee

2015-present

Institutional Review Board

2015-present

University of Pittsburgh

Director

Flow Cytometry Core Facility

2009 - present

Department of Ophthalmology

P30 EY08098

Assistant Director

2009- 2012

Resident Scholarly Project Committee

Department of Ophthalmology

T32 Training Grant Committee

2013

Department of Ophthalmology

Examiner

2009, 2010, 2013

Qualifying Examination Committee,

Immunology Program

Emory University

Examiner

2006

Qualifying Examination Committee

Immunology and Molecular Pathogenesis Program

Community Activities

Boy Scouts of America

Den Leader Pack 935

2008-2013

Assistant Scoutmaster Troop 935

2011-2013

Catholic Troops of St. George

Troop Leader

2013-present

OTHER ACTIVITIES:**Intercollegiate Athletics**

University of Maryland Football Program

1987-1989