

• **Y. HWAN KIM**

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**SUMMARY**

- **Ph.D., Neuroscience from University of California, Los Angeles (UCLA)**
- **Published over 23 peer-reviewed research articles**
- **10+ yrs of grant writing (NIH, NSF, MJFF & APDA)**
- **Reviewed multiple Neuroscience research manuscripts (PLoS ONE, PLoS Biol, IntJNP, FRBM, Am J. Transl Res, Food & Chem Toxicol, Neurochem Int., ACTA Neuropathologia, and Dev Neurobiol)**
- **Trained numerous research associates and (under)graduate students over the past 18 years**
- **24+ years of research experience in laboratories including Molecular Cellular Neuroscience**

**PROFESSIONAL EXPERIENCE**

**DELAWARE STATE UNIVERSITY, DOVER, DE**

*Associate Professor (Tenured), Biological Sci./Neuroscience program* Aug 2017 - present

- Assessing the mechanism of Lewy body formation in Parkinson's disease (PD), particularly post-translational modification such as SUMOylation, ubiquitination and phosphorylation

*Assistant Professor (Tenure-Track), Biological Sci./Neuroscience* Aug 2012 - Aug 2017

- Screening novel compounds as therapeutics in Parkinson's disease models
- Finding potential combination therapeutics for PD using molecular, cellular, and stereological techniques

**BUCK INSTITUTE FOR RESEARCH ON AGING, NOVATO, CA**

*Sr. Post-Doctoral Fellow: Julie Andersen lab* Oct 2007 - Aug 2012

- Published articles showing lithium effect on cell protection and preventing olfactory dysfunction, which can be a diagnostic marker for PD, using behavioral neuroscience, stereology and synaptosomal analysis

**JOHNS HOPKINS MEDICAL INSTITUTION, BALTIMORE, MD**

*Post-Doctoral Fellow, Neuropathology division (Don Price/Mike Lee)* Sep 2006 - Oct 2007

- Established alpha-synuclein and LRRK2 transgenic mouse and stable cell lines in PD

**UNIVERSITY OF CALIFORNIA, LOS ANGELES (UCLA)**

*Graduate Researcher/Post-Doctoral Fellow, Art Arnold Lab* Sep 2000 - Aug 2006

- Assessed sex differences of gene expression in brains using molecular and histological assays

**UNIVERSITY OF CALIFORNIA, LOS ANGELES (UCLA)**

*Research Associate, Ganz/Schlinger Lab* Jan 1999 - Sep 2000

- Purified and characterized antimicrobial peptides from human secretory samples

**EDUCATION**

**UNIVERSITY OF CALIFORNIA, LOS ANGELES (UCLA)**

Ph.D. Neuroscience/Physiological Science, Arthur P. Arnold's lab Feb 2006

Thesis: Steroid effect on sexual dimorphism in brain using zebra finch and mouse models

Graduate Student Dissertation Fellowship Award (2004-2005)

**KOREA UNIVERSITY, SEOUL, S. KOREA**

M.S. Biotechnology, Chan-Wha Kim's lab Jun 1998

Thesis: Suspension Culture of Bok-1 cell from *Bombina orientalis*

for the Production of Antibacterial Peptide  
KOREA UNIVERSITY, SEOUL, S. KOREA  
B.S. Major: Plant Physiology; Minor: Molecular Biology

Jun 1996

#### PUBLICATIONS

Cartier E, Garcia-Olivares J, Lin ML, Janezic EM, Viana J, Torres G, and **Kim YH**. The SUMO conjugase Ubc9 prevents the degradation of dopamine transporter, enhancing its cell surface level and dopamine uptake. *Frontiers in Cellular Neuroscience*. 2019 Feb 09, 13(35):1-23.

Chae KS and **Kim YH**. A potential role of geomagnetic field in transcranial magnetic stimulation therapy for neurodegenerative diseases. *Frontiers in Human Neuroscience*. 2017 Sep 27 11(478):1-5. Review.

Janezic EM, Caviness JE, Kanda SG, Davis XD, and **Kim YH**. Commercially available pesticides cause additive or synergistic damages in dopaminergic cells: Relevance for Parkinson's disease pathology. *Annals of Neurodegenerative disorders*. 2016 1(2):1010:1-9.

Lazzara CL and **Kim YH**. Potential application of Lithium in Parkinson's and other neurodegenerative diseases. *Frontiers in Neuroscience*. 2015 Oct 27:9:403. review.

Lazzara CL, Riley RR, Rane A, Andersen JK, and **Kim YH**. The combination of lithium and L-dopa/Carbidopa reduces abnormal involuntary movements (AIMs) in MPTP-lesioned mice: relevance for Parkinson's disease Therapy. *Brain Res*. 2015 Jul, 1622:127-136.

Lieu C, Dewey C, Chinta S, Rane A, Rajagopalan S, Batir S, **Kim YH**, Andersen JK. Lithium prevents parkinsonian behavioral and striatal phenotypes in an aged parkin mutant transgenic mouse model. *Brain Res*. 2014 Dec, 27;1591:111-117.

**Kim YH**, Rane A, Lussier S, and Andersen JK. Lithium protects against oxidative stress-mediated cell death in alpha-synuclein over-expressing *in vitro* and *in vivo* models of Parkinson's disease. *J. Neurosci Res*. 2011 Oct.89(10):1666-75.

Satre D, **Kim YH**, and Corbitt C. Androgen receptor location in the Dark-eyed Junco using a probe for *in situ* hybridization histochemistry generated from zebra finch cDNA. *J. Neuroscience Methods*. 2011. Sep 30;201(1):180-4.

**Kim YH**, Lussier S, Rane A, Choi SW, and Andersen JK. Inducible dopaminergic glutathione depletion in an alpha-synuclein transgenic mouse model results in age-related olfactory dysfunction. *Neuroscience*. 2011. Jan 13;172:379-86.

Naurin S, Hansson B, Hasselquist D, **Kim YH**, and Bensch S. The sex-biased brain: sexual dimorphism in gene expression in two species of songbirds. *BMC Genomics*. 2011. Jan 14;12(1):37.

Itoh Y, Replogle K, **Kim YH**, Wade J, Clayton DF, and Arnold AP. Sex bias and dosage compensation in the zebra finch versus chicken genomes: general and specialized patterns among birds. *Genome Research*. 2010. Apr 20(4):512-8.

Dragich JM, **Kim YH**, Arnold AP, and Schanen CN. Differential distribution of the *Mecp2* splice variants in the postnatal mouse brain. *J Comp Neurol*. 2007. Feb 2;501(4):526-542.

**Kim YH** and Arnold AP. Expression of NGF and trkA mRNA in song control and other regions of the zebra finch brain. *Neurosci Lett*. 2006. Dec 1;409(2):151-6.

**Kim YH**, Peregrine J, and Arnold AP. The Distribution of expression of Doublecortin (DCX) mRNA and Protein in Zebra Finch Brain. *Brain Research*. 2006. Aug 23;1106(1):189-96

**Kim YH** and Arnold AP. Distribution and Onset of Retinaldehyde Dehydrogenase (zRaldH) Expression in Zebra Finch Brain: Lack of Sex Difference in HVC and RA at Early Posthatch Ages. *J Neurobiol.* 2005. Dec 65(3):260-268.

**Kim YH**, Perlman WR, and Arnold AP. Expression of androgen receptor mRNA in zebra finch song system: developmental regulation by estrogen. *J Comp Neurol.* 2004. Feb 16;469(4):535-47.

Arnold AP, Xu J, Grisham W, Chen X, **Kim YH**, and Itoh Y. Minireview: Sex chromosomes and brain sexual differentiation. *Endocrinology.* 2004. Mar 145(3):1057-62.

Cole AM, Tahk S, Oren A, Yoshioka D, **Kim YH**, Park A, and Ganz T. Determinants of *Staphylococcus aureus* nasal carriage. *Clin Diagn Lab Immunol.* 2001. Nov 8(6):1064-9.

Saldanha CJ, Tuerk MJ, **Kim YH**, Fernandes AO, Arnold AP, and Schlinger BA. Distribution and regulation of telencephalic aromatase expression in the zebra finch revealed with a specific antibody. *J Comp Neurol.* 2000. Aug 7;423(4):619-30.

Cole AM, **Kim YH**, Tahk S, Hong T, Weis P, Waring AJ, and Ganz T. Calcitermin, a novel antimicrobial peptide isolated from human airway secretions. *FEBS Lett.* 2001. Aug 24;504(1-2):5-10.

Cole AM, Shi J, Ceccarelli A, **Kim YH**, Park A, and Ganz T. Inhibition of neutrophil elastase prevents cathelicidin activation and impairs clearance of bacteria from wounds. *Blood.* 2001. Jan 1;97(1):297-304.

Cole AM, Wu M, **Kim YH**, and Ganz T. Microanalysis of antimicrobial properties of human fluids. *J Microbiol Methods.* 2000. Jul 41(2):135-43.

**Kim YH**, Yang JW, and Kim CW. Suspension culture of an antibacterial peptide producing cell line from *Bombina orientalis*. *J Microbiol and Biotech.* 1998. Mar 8(5):461-465.

#### **US PATENT**

Julie Andersen and **Kim YH**. 2013. Low dose Lithium in the treatment or Prophylaxis of Parkinson's disease. USPTO patent # [US 2013-0017274 A1](#)

#### **MEMBERSHIPS AND AWARDS**

2015 - present: Scientific advisory board member, AurimMed Pharma, inc., Park city, UT

2016 - present: Editorial Board Member, Current Updates in Aging. OPR Science

2016: Junior faculty research award, CMNST, Delaware State University

2002 - present: Member, Society for Neuroscience (SfN)

2004 - 2005: Graduate student Dissertation fellowship, UCLA

#### **TEACHING EXPERIENCE**

Aug, 2012-present: Assistant Professor in the Dept of Biological Sciences at Delaware State University

##### **Courses taught**

- Skills of research careers I & II (2017 & 2018)
- Neurochemistry (2013, 2014, 2015, 2016, 2017 & 2018)
- Functional NeuroAnatomy (2017 & 2018)
- University Seminar I or II (2014 & 2016)
- Sophomore Seminar (2013, 2014 & 2015)
- Diseases of the Nervous System (2013, 2014 & 2015)
- Professional Development I & II (2015, 2016, 2017 & 2018)
- Human Heredity Lab (2012, 2013, 2014 & 2016)

Fall, 2011: Adjunct lecturer at Dominican University, California, San Rafael, CA ("Biochemistry" for Graduates)

Spring, 2006: Adjunct lecturer at Santa Monica College, Santa Monica, CA (Taught "Molecular Biology")

Spring, 2006: Guest lecturer at UCLA, Los Angeles, CA (“Neuroendocrinology for Graduates)

**UNDERGRADUATE/GRADUATE STUDENTS TRAINED BY PI AT DSU**

Shading indicates African-American or Hispanic students, \* : RISE/MARC students, + : SMILE student, \*\*: Bridge to Doctor’s program.

	<b>Name</b>	<b>Time in lab</b>	<b>Current Status</b>
1	Anurupa Ghosh	Oct. 2018 - present	PhD student in Neuroscience
2	Benedict Igwe	Oct. 2018 - present	PhD student in Neuroscience
3	Lindsey Ruggiero	Oct. 2017 - present	PhD student in Neuroscience
4	Juan Viana	Aug. 2016 - Oct, 2018	MS, a researcher at Aberdeen Research Lab,MD
5	Dionne Williams	Sep. 2016 - July, 2018	Currently Neuroscience PhD student at DSU
6	Eric Janezic	Jul. 2014 - May, 2016	MS student (PhD student at U. Washington)
7	Carol Lazzara	Oct. 2012 - Jun, 2016	Completed her M.S. in Neuroscience
8	Janae Caviness**	Aug. 2014 - Aug, 2016	MS student, BTD (Cell scientist at U. of Penn, Neuroscience Center, PA)
9	Su Nam	Jun. 2018 - present	Senior, GPA 3.88
10	Tahlia Casey	Sep. 2016 - Sep. 2018	Senior, NIH-INBRE research intern
11	Alex Burris	Nov. 2017 - present	Junior, GPA 3.74, INBRE intern
12	Austin Jackson	Dec. 2017 - Feb. 2019	Senior, GPA 3.22, NIH-Neurosci intern
13	Mayah Ngundam	Dec. 2017 - Sep. 2018	Sophomore, GPA 3.55
14	Alexis Neuer	Aug. 2016 - Aug. 2017	Junior, NIH-Neuroscience & CIBER intern
15	Margaret Steward*	Jan. 2013 - May, 2016	BS, GPA 3.94 (PhD student at Ohio State Univ.)
16	Xenia Davis*	Jun. 2013 - May, 2016	BS: GPA 3.8 (PhD student at U. of Cincinnati)
17	Sundus Ahmed	Jan. 2015 - Dec, 2016	BS (Research associate, Eurofins Lab, PA)
18	TaeHo Cho	Mar. 2015 - May, 2016	BS (Ph.D. student at DGIST in S. Korea)
19	Katrina Mitchell	May 2015 - Jun, 2016	BS, GPA 3.55 (Applying for Medical school)
20	J.T. Lee	Aug. 2015 - Jun,2016	Post-baccalaureate (Applying for medical school)

21	Deidre Carter++	Oct. 2012 - Nov. 2013	BS (PhD student at Howard Univ, BTD for MS)
22	Sambee Kanda	Sep. 2013 - May, 2015	BS (Research associate at Christiana hosp, DE)
23	Douglas Mullen	Nov. 2012 - May, 2014	BS (MS student at Liberty Univ.)
24	Nicole Brown+	May 2013 - Nov. 2014	BS (Science teacher in DE: GPA 3.88)
25	Thaddeus Lehman	Jan. 2016 - Dec, 2016	BS (Research Scientist at Siemens, DE)
26	Cassio Noso	Aug. 2013 - Aug. 2014	BS (PhD student at Univ. of Sao Paolo in Brazil)
27	Young Lee	May 2015 - Aug. 2015	Summer Intern, Graduated Univ of Delaware
28	Summer Stone	May 2016 – Aug. 2016	Summer Intern, Graduate Wesley College
29	Joseph Katz	May 2016 – Aug. 2016	Summer Intern, Graduated Univ of Delaware
30	April Roeper	May 2017 – Aug. 2017	Summer Intern, Senior at Willington University
31	Michelle Scott	Apr. 2018 - present	Summer intern, Senior at DSU, nursing

#### **GRADUATE STUDENT THESIS COMMITTEE MEMBERSHIP (DSU)**

#	Year(s)	Student Name	Degree	Thesis advisor	Thesis status
1	2012-14	Charlotte Phillips	M.S. Neuroscience	Dr. M. Harrington	Dec, 2014
2	2012-14	LaTresa Copes	M.S. Neuroscience	Dr. R. Aikins; Dr. Kim as her academic adviser	Dec, 2014
3	2012-14	Carol Lazzara	M.S. Neuroscience	Dr. Y.H. Kim	June, 2014
4	2013-15	Natalie Kendall	M.S. Neuroscience	Dr. H. Lawal	June, 2015
5	2014-16	Eric Janezic	M.S. Neuroscience	Dr. Y.H. Kim	May, 2016
6	2014-16	Janae Caviness	M.S. Neuroscience	Dr. Y.H. Kim	May, 2016
7	2014-16	Sheed Itaman	M.S. Neuroscience	Dr. M. Gitcho	May, 2016
8	2015-17	Carol Lazzara	Ph.D. Neuroscience	Dr. Y.H. Kim	in-progress
9	2014-17	Lisa DeSchazo	M.A. Neuroscience	Dr. Y.H. Kim	June, 2018
10	2014-16	Michael Hickey	M.S. Agriculture	Dr. J.L. Lee	May, 2016
11	2015-17	Daniel White	M.S. Biology	Dr. H. Lawal	May, 2017
12	2016-18	Dionne Williams	M.S. Neuroscience	Dr. Y.H. Kim	July, 2018

13	2016-18	Juan Viana	M.S. Neuroscience	Dr. Y.H. Kim	Oct, 2018
14	2017-present	Lindsey Ruggiero	PhD. Neuroscience	Dr. Y.H. Kim	in-progress
15	2018-present	Anurupa Ghosh	Ph.D. Neuroscience	Dr. Y.H. Kim	in-progress
16	2018-present	Benedict Igwe	Ph.D. Neuroscience	Dr. Y.H. Kim	in-progress

#### RECENT ORAL PRESENTATIONS

2/27/19: Korea Institute of Science & Technology, Seoul, S. Korea. "SUMOylation can be a regulatory target in Parkinson's disease pathology", hosted by Dr. SH Lee

6/09/18: Burke Neurological Institute, Cornell Medical School, White Plains, NY. "SUMOylation of alpha-synuclein can be a regulatory target in Parkinson's disease pathology", hosted by Dr. Rajiv Ratan

12/18/17: Korea Institute of Science & Technology, Seoul, S. Korea. "SUMOylation as a regulatory target for Parkinson's disease pathology", hosted by Dr. GC Keum

9/19/16: University of Delaware, Newark, DE. "Neuroprotective effects of SUMOylation as a potential target to prevent Parkinson's disease pathology", hosted by Dr. Dayan Knox

3/09/16: University of Maryland, School of Medicine, Baltimore, MD. "SUMOylation of alpha-synuclein: a potential target for Parkinson's disease", hosted by Dr. Brian Polster

2/13/14: Columbia University, New York, NY. "Developing combination therapies for Parkinson's disease", hosted by Dr. A. Yamamoto

1/6/14: International Neuroscience Research Workshop, Kyung-Pook National University, Daegu, S. Korea. "The combination of lithium and L-dopa/Carbidopa reduces abnormal involuntary movements (AIMs) in MPTP-lesioned mice in the Parkinson's disease model", hosted by Dr. KS Chae

12/19/13: Korea Brain Research Institution (KBRI), S. Korea. "The mechanisms of Lithium in protecting cells against oxidative stress", hosted by Dr. JH Suk

5/23/13: Delaware Neuroscience Retreat at A.I. DuPont hospital, Willington, DE. "Lithium: a potential therapeutic in Parkinson's Disease", hosted by Dr. Matthew Butchbach

5/16/13: University of Central Florida, Orlando, FL. "Olfactory dysfunction, a biomarker and Lithium, a potential therapeutic for Parkinson's Disease", hosted by Dr. Alex Cole

7/12/12: Sejong University, Seoul, S. Korea. "Olfactory dysfunction, a biomarker and Lithium, a potential therapeutic for Parkinson's Disease", hosted by the Dept. of Biotechnology

#### ONGOING RESEARCH SUPPORT

5P20GM103653 Kim (role: PI, Target Investigator) 9/1/17-8/31/22 NIH  
Assessing mechanisms of Lithium as a potential therapeutic compound in Parkinson's disease models.

1R25GM122722-01 dual-PIs (Kim & Harrington) 5/01/17 – 3/31/22 NIH-RISE  
A graduate training program to increase diversity in biomedical Science Total: 1.854M for 5 yrs

AurimMed Pharma Research fund Kim (PI) 1/01/14 – 6/30/19 AurimMed Pharma  
Screening novel compounds from AurimMed Pharma for developing Parkinson's disease therapeutics.

Private Research fund                      Kim (PI)                      1/01/19 – 12/31/19                      AptaBio Therapeutic Inc  
Testing therapeutic effects of novel AptaBio compounds in Parkinson's disease mouse models.