

## CURRICULUM VITAE

**Collin Y. Ewald, Ph.D.**

### PERSONAL DATA

Date & place of birth: 25. December 1980, Basel, Switzerland  
Spoken languages: English (fluent), German (native), and French (basic)  
Current employer: Joslin Diabetes Center, Harvard Medical School  
Contact: [collin.ewald@joslin.harvard.edu](mailto:collin.ewald@joslin.harvard.edu)

### EDUCATION

Ph.D.,	<b>Neuroscience</b>	City University of New York, USA	2011
M.Phil.,	<b>Biology</b>	City University of New York, USA	2008
M.Sc.,	<b>Molecular Biology</b>	University of Basel, Switzerland	2007
B.Sc.,	<b>Molecular Biology</b>	University of Basel, Switzerland	2005
Matura	<b>Mathematics</b>	Gymnasium am Kirschgarten, Basel, Switzerland	2001
Student Exchange		Eldorado High School, Las Vegas, USA	1999

### RESEARCH EXPERIENCE

**Instructor in Medicine** at Harvard Medical School 2015-present  
**Research Associate (Junior Faculty Member)** in the Research Division at the Joslin Diabetes Center. 2015-present

**Postdoctoral Research Fellow** in Medicine at Joslin Diabetes Center, Harvard Medical School. Laboratory of Dr. T. Keith Blackwell. 2011-2014

- *Discovered that reduced insulin/IGF-1 signaling extends longevity via two distinct pathways*
- *Demonstrated that almost all longevity interventions require and invest in replenishing of extracellular matrix components*
- *Identified a transcription factor (ATF-5) that is required and sufficient to increase lifespan when protein translation is reduced*

**Graduate Research fellow**, Neuroscience, City University of New York. 2006-2011  
Doctoral Thesis: "Multifunctional roles of APL-1 in *C. elegans*"  
Thesis Adviser: Dr. Chris Li.

- *Found that overexpression of the extracellular domain of APL-1 (Amyloid Precursor Protein-like 1) modulates development, metabolism, lifespan, and learning in C. elegans.*

**Master's research**, Friedrich Miescher Institute (FMI) for Biomedical Research, University of Basel and part of the Novartis Research Foundation. 2005-2006  
Laboratories of Dr. Joy Alcedo and Dr. Nancy E. Hynes.

- *Characterized memo-1 (mediator of ErbB2-driven cell motility 1) as a novel regulator of NADPH-oxidase activity in C. elegans.*

### TEACHING EXPERIENCE

**Teaching Assistant**, Department of Genetics, Harvard Medical School 2014, 2015  
Genetics 390qc "Boot Camp" course teaching to graduate students (1 day)

**Teaching Assistant**, Department of Biology, City College of New York 2006-2007  
Bio101 course teaching to undergraduate students (4 hours per week)  
Genetics Bio20600 course teaching to undergraduate students (1 hours per week)

## MENTORING AND SUPERVISORY EXPERIENCE

Monet Bland	Undergrad	2012-2014	Bachelor Honor's thesis; Poster
Krina Patel	Undergrad	2012-2014	Bachelor Honor's thesis; Poster
Sara Schütze	Master	2013	Albert Renold fellowship; Poster
Caroline Obieglo	Master	2012	Master rotation program; Poster
Julia Rogers	Undergrad	2011-2012	Honor's thesis; Poster
Afsana Nasrin	High School	2010-2011	Publication [2]; Poster
Aneela Gillani	High School	2009-2011	Publication [2]; Poster
Lana Tolen	Undergrad	2009-2011	Publication [2]; Poster
Ruby Cheng	Undergrad	2009-2011	Publication [2]; Poster
Vishal Shah	Undergrad	2009-2010	Publication [2]; Poster

## PEER-REVIEWED PUBLICATIONS

1. **Ewald, C.Y.**, Landis, J.N., Porter Abate, J., Murphy, C.T., Blackwell, T.K. (2015). Dauer-independent insulin/IGF-1 signalling implicates collagen remodelling in longevity. *Nature* 519, 97–101. doi: 10.1038/nature14021  
Joslin News release video [\[link\]](#), Science Daily [\[link\]](#), MedicalXpress [\[link\]](#).  
The Scientist: Long Live Collagen [\[link\]](#)  
TV interview, 7vor7, TeleBasel, Switzerland [\[link\]](#)  
Radio interview, SWR2 (Südwestrundfunk) German Public Radio [\[link\]](#)  
Honoree mentioning from American Federation For Aging Research [\[link\]](#)
2. **Ewald, C.Y.**, Cheng, R., Tolen, L., Shah, V., Gillani, A., Nasrin, A., Li, C. (2012). Pan-neuronal expression of APL-1, an APP-related protein, disrupts olfactory, gustatory and touch plasticity in *Caenorhabditis elegans*. *J Neurosci*. 32: 10156-69. doi: 10.1523/JNEUROSCI.0495-12.2012. PMID: 22836251, PMCID:PMC3698849
3. **Ewald, C.Y.**, Raps D.A., Li, C. (2012). APL-1, the Alzheimer's Amyloid precursor protein in *Caenorhabditis elegans*, modulates multiple metabolic pathways throughout development. *Genetics* 191: 493-507. doi: 10.1534/genetics. 112.138768. PMID: 22466039, PMCID: PMC3374313  
Issue highlights: Genetics June 2012 191:NP [\[link\]](#)  
BBC news: Alzheimer's gene 'diabetes link'. 14 June 2012. [\[link\]](#)  
Wallstreet-online (Germany) [\[link\]](#)
4. **Ewald, C.Y.** & Li, C. (2012). The secreted Alzheimer-related protein fragment has an essential role in *Caenorhabditis elegans*. *Prion* 6: 433-6. doi: 10.4161/pri.22310. PMID: 23044509, PMCID: PMC3510856
5. **Ewald, C.Y.** & Li, C. (2012). *Caenorhabditis elegans* as a model organisms to study APP function. Invited Review article for the 2012 special issue on "The physiological functions of APP". *Experimental Brain Research* 217: 397-411. doi: 10.1007/s00221-011-2905-7. PMID: 22038715, PMCID: PMC3746071
6. **Ewald, C.Y.** & Li, C. (2010). Understanding the molecular basis of Alzheimer's disease using a *Caenorhabditis elegans* model system. *Brain Structure and Function* 214(2-3):263-83. doi: 10.1007/s00429-009-0235-3. PMID: 20012092, PMCID: PMC3902020

## RESEARCH SUPPORT

### Current

P300P3\_154633 Collin Y. Ewald (PI) 08/01/14-1/31/16

#### Swiss National Science Foundation

Novel mechanisms of longevity assurance revealed by insulin/IGF-1 signaling [[link](#)]

Role: Postdoctoral fellow (Advanced Postdoc.Mobility)

### Completed

13166 Collin Y. Ewald (PI) 07/01/13-6/30/14

#### Ellison Medical Foundation/ American Federation for Aging Research (AFAR)

The impact on aging of preferential translation of ATF-5 [[link](#)]

Role: Postdoctoral fellow

PBSKP3\_140135 Collin Y. Ewald (PI) 01/01/12-6/30/13

#### Swiss National Science Foundation

Impact of the transcription factor SKN-1 on the unfolded protein response to protect against oxidative stress in *C. elegans*. [[link](#)]

Role: Postdoctoral fellow (Fellowships for prospective researchers)

## AWARD AND HONORS

Genetics Society of America (GSA)'s **DeLill Nasser Award** for Professional Development in Genetics [[link](#)] 2015

Certificate for Mini Symposia/ Academy Center for Teaching and Learning, Harvard Medical School 2013

**Swiss Spotlight Scientist** of November 2012, Science-USA (Boston). [[link](#)] 2012

Honoree Mentioning at the 27th Annual Joslin Diabetes Center 2012

Marble Banquet (Harvard Club)

Competitive CUNY Research Grant for Doctoral Students 2010

Sue Rosenberg Zalk Travel & Research Fund for the traveling and presenting at International *C. elegans* meeting 2009

Doctoral Student Council travel award for the Northeast Regional Meeting of the Society of Developmental Biology 2009

Sue Rosenberg Zalk Travel & Research Fund for the traveling and presenting at European *C. elegans* Meeting 2008 in Spain. 2008

CCNY GSC 2008 Graduate Student **Award for best progress and productivity** in the Neuroscience research program of the City University of New York 2008

NYAS Future Entrepreneur recognized by the New York Academy of Sciences 2007

Competitive CUNY Research Grant for Doctoral Students 2007

Honor student award, Eldorado High School, Las Vegas, USA 1999

## EDITORIAL ACTIVITIES

*Journals for which I served as a reviewer*

*PeerJ* [ISSN: 2167-8359; [link](#)] 2014-present

*Molecules* [ISSN: 1420-3049; [link](#)] 2015-present

*Nature Communications* [ISSN: 2041-1723; [link](#)] 2015-present

*Aging Cell* [ISSN: 1474-9726; [link](#)] 2015-present

## PROFESSIONAL MEMBERSHIPS

The Gerontological Society of America 2013-present

The Genetics Society of America 2006-present

The Society for Neuroscience 2011-2012

**PRESENTATIONS***International Talks*

- Importance of Extracellular Matrix Remodeling for Longevity and Oxidative Stress Resistance in *C. elegans*. Oxidative Stress & Disease, Gordon Research Conference, Ventura, California, USA 2015
- Dauer-independent Insulin/IGF-1 signaling implicates collagens in longevity. Aging-Pushing the Limits of Cellular Quality Control (A5), Keystone Symposia, Steamboat Springs, Colorado, USA. 2014
- Genetic interactions between *apl-1*, a gene encoding an amyloid precursor-related protein, and *daf-16*, a regulator of lifespan. 17<sup>th</sup> International *C. elegans* meeting, UCLA, Los Angeles, California, USA. 2009

*Regional Invited Presentations*

- Insulin/IGF-1 signaling implicates collagens in longevity. Joslin Diabetes Center Retreat, Portsmouth, New Hampshire, USA. 2014
- An underlying DAF-2 longevity pathway that is distinct from the dauer program. Boston Area Worm Meeting, Massachusetts Institute of Technology, USA. 2013

*Local Invited Presentations*

- Importance of Extracellular Matrix Remodeling and novel aspects of Insulin/IGF-1 signaling for longevity Aging & Longevity Discussion Group, Harvard Genetics Department, Boston, USA. 2015
- Dauer-independent insulin/IGF-1 signaling implicates collagens in longevity. Longwood Area Worm Meeting, Harvard Medical School, Boston, USA. 2014
- Transcription factor ATF-5 mediates longevity. Longwood Area Worm Meeting, Harvard Medical School, Boston, USA. 2013
- An underlying DAF-2 longevity pathway that is distinct from the dauer program. Longwood Area Worm Meeting, Harvard Medical School, Boston, USA. 2013
- Insulin/ IGF-1 signaling, the extracellular matrix, and aging. Seminar Series, Joslin Diabetes Center, Harvard Medical School, Boston, USA. 2013
- Amyloid Precursor-like Protein APL-1 modifies lifespan in *C. elegans*. Longwood Area Worm Meeting, Harvard Medical School, Boston, USA. 2011

**POSTER PRESENTATIONS**

- Ewald, C.Y.**, Landis, J.N., Porter Abate, J., Murphy, C.T., Blackwell, T.K., Importance of Extracellular Matrix Remodeling for Longevity and Oxidative Stress Resistance in *C. elegans*. Oxidative Stress & Disease, Gordon Research Conference, Ventura, California, USA 2015
- Ewald, C.Y.** & Blackwell, T.K., ATF-5 mediates longevity under reduced protein translational conditions. The Paul F. Glenn / AFAR Conference on the Biology of Aging. Santa Barbara, California, USA 2014
- Ewald, C.Y.**, Landis, J.N., Porter Abate, J., Murphy, C.T., Blackwell, T.K., Dauer-Independent Insulin/IGF-1 Signaling Implicates Collagens in Longevity. Aging-Pushing the Limits of Cellular Quality Control (A5), Keystone Symposia, Steamboat Springs, Colorado, USA 2014
- Ewald, C.Y.**, Landis, J.N., Porter Abate, J., Murphy, C.T., Blackwell, T.K., An underlying dauer-independent DAF-2 longevity program implicates collagen homeostasis in longevity. International Worm Meeting, UCLA, USA. 2013

- Ewald, C.Y.**, Cheng, R., Tolen, L., Shah, V., Gillani, A., Nasrin, A., Li, C., 2011  
Overexpression of APL-1 disrupts learning via the insulin/IGF-1 and TGF- $\beta$  pathway.  
International Worm Meeting, UCLA, USA.  
*Poster is published at F1000Poster 2013, 4: 22 [link]*
- Zhao, P., **Ewald, C.Y.**, Li, C., Identification of critical neurons for APL-1 expression in 2011  
*C. elegans*. International Worm Meeting, UCLA, USA.
- Ewald, C.Y.** & Li, C., Increased dosage of the extracellular domain of APL-1, an 2010  
APP-related protein, can increase lifespan and slow developmental progression via  
transcription factor DAF-16/FOXO and nuclear hormone receptor DAF-12.  
Molecular Genetics of Aging 2010. Cold Spring Harbor Laboratory, NY, USA.
- Ewald, C.Y.**, Cheng, R., Tolen, L., Shah, V., Li, C., 2010  
Neuronal overexpression of APL-1, an amyloid precursor-related protein, impairs  
learning in *C. elegans*. Graduate Center of the City University of New York, USA.
- Ewald, C.Y.** & Li, C., The Extracellular Domain of APL-1, a Protein Related to Human 2010  
Amyloid Precursor Protein, Signals through DAF-16/FOXO and DAF-12 to Influence  
Lifespan. *C. elegans* topic meeting 2010: Aging, Metabolism, Pathogenesis, Stress,  
and Small RNAs, University of Wisconsin-Madison, USA.
- Shah, V., Cheng, R., Tolen, L., **Ewald, C.Y.**, Li, C., Neuronal Overexpression of 2010  
APL-1, a Protein Related to Human Amyloid Precursor Protein, Disrupts Olfactory  
Adaptation. *C. elegans* topic meeting 2010: Neuronal development, synaptic function &  
behavior, University of Wisconsin-Madison, USA.
- Ewald, C.Y.** & Li, C., APL-1, an amyloid precursor-related protein, influences the 2010  
activity of lifespan-determining transcription factor DAF-16/FOXO in *C. elegans*.  
Genetics of Model Organisms to Human Biology, Boston, MA, USA
- Ewald, C.Y.** & Li, C., Overexpression of APL-1, a *C. elegans* amyloid precursor- 2009  
related protein, causes an incompletely-penetrant larval lethality and slowed  
development. Northeast Regional Meeting of the Society of Developmental  
Biology 2009, Woods Hole, MA, USA.
- Ewald, C.Y.** & Li, C., Lifespan Effects of APL-1, a *C. elegans* Protein Related to 2008  
Human Amyloid Precursor Protein. *C. elegans* Neuronal Development, Synaptic  
Function, and Behavior Topic Meeting, University of Wisconsin-Madison, USA.
- Ewald, C.Y.** & Li, C., How worms can provide insights into Alzheimer's disease. 2008  
The Graduate Student Symposium at The City College of New York.  
*Award for poster presentation*
- Ewald, C.Y.** & Li, C., The role of APL-1, an amyloid precursor-like protein in 2008  
*C. elegans*. Ninth Annual Celebration of Science, Engineering and Mathematics.  
Graduate Center of the City University of New York, USA.  
*Award for poster presentation*
- Ewald, C.Y.** & Li, C., The role of APL-1, an amyloid precursor-like protein in 2008  
*C. elegans*. European Worm Meeting, Seville, Spain
- Ewald, C.Y.** & Li, C., Does targeted overexpression of APL-1 in neurons extend 2007  
lifespan? International Worm Meeting, UCLA, USA.
- Ewald, C.Y.**, Hynes, N., Alcedo, J., Characterization of the Worm Homolog of 2006  
memo, a Gene that Acts Downstream of the Mammalian EGF Pathway.  
European Worm Meeting, Hersonissos, Crete, Greece.
- Ewald, C.Y.**, et al., Expression, Purification and NMR Spectroscopy of 2005  
T-Cadherin Domain1. Biozentrum Basel, Switzerland.