

# Josefa Steinhauer, PhD

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[www.yu.edu/yeshiva-college/steinhauer-lab](http://www.yu.edu/yeshiva-college/steinhauer-lab)

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## SUMMARY

Gametes (sperm and eggs) are critical for animals to reproduce. Much remains to be learned about how gametes undergo their complex development, which will impact our understanding of human fertility and infertility. Phospholipids are critical molecular components of all cells. How phospholipid metabolism affects gametogenesis lies at the center of my research interests, using *Drosophila melanogaster* as a model system. Early work from my lab suggested a key role for phospholipid metabolism in completion of spermatogenesis. Numerous collaborative projects developed from my interest in spermatogenesis and led to novel findings regarding a previously uncharacterized cytoskeletal regulator in spermatogenesis, gene functional evolution in the male gonad, and age-dependent changes in spermatogenesis and male fertility. Current studies have shifted to investigating the phospholipid metabolizing enzyme iPLA<sub>2</sub>-VIA, which we have discovered plays an important role in germline mitochondrial integrity and ovarian aging. This enzyme also is important in neuronal aging and is associated with neurodegenerative disease in humans.

## CURRENT POSITIONS

### Professor (Tenured) | Yeshiva University | 2023-present

Department of Biology

New York, NY 10033

### Associate Professor (Investigator track) | Albert Einstein College of Medicine | 2019-present

Department of Developmental and Molecular Biology

Bronx, NY 10461

## EXPERIENCE

Associate Professor	Biology	Yeshiva University, New York, NY	2017-2023
Assistant Professor	Biology	Yeshiva University, New York, NY	2011-2017
Postdoctoral Fellow	Developmental Genetics	NYU Langone Medical Center, New York, NY	2005-2011

## EDUCATION

PhD	Biological Sciences	Columbia University, New York, NY	2005
MPhil	Biological Sciences	Columbia University, New York, NY	2002
MA	Biological Sciences	Columbia University, New York, NY	2001
BS	Biology	Case Western Reserve University, Cleveland, OH	1999

*summa cum laude*, Phi Beta Kappa

## RESEARCH

### Independent Research | 2011-present

Department of Biology

Yeshiva College, New York, NY

- Characterized the role of iPLA<sub>2</sub>-VIA in *Drosophila* fertility and aging.
- Developed a quantitative method to analyze spermatid individualization in *Drosophila*.
- Investigated phospholipid metabolism enzymes in spermatid individualization.
- Demonstrated a role for newly evolved genes in male fertility.

*Collaboration with Eric Lai (Memorial Sloan Kettering Cancer Center) and others*

- Characterized the novel cytoskeletal regulator Combover in spermatogenesis.  
*Collaboration with Andreas Jenny (Albert Einstein College of Medicine)*
- Examined age-dependent reproductive decline.  
*Collaboration with Stuart Wigby (Oxford University) and others*

### Postdoctoral Research | 2005-2011

*Advisor: Jessica Treisman*

*Skirball Institute of Biomolecular Medicine*

*NYU Langone Medical Center, New York, NY*

- First characterization of the *Drosophila* lysophospholipid acyltransferases Oysgedart and Nussy. *Collaboration with the labs of Robert Murphy (University of Colorado, Denver) and Dennis Voelker (National Jewish Health)*
- Analysis of the function and regulation of post-translational palmitic acid modification of the secreted Epidermal Growth Factor Receptor ligand Spitz in *Drosophila*.
- Participated in a cell-based screen for novel lipid modified signaling ligands.
- Participated in a genetic *Drosophila* photoreceptor development screen of the X chromosome.

### Ph.D. Thesis Research | 2002-2005

*Advisor: Daniel Kalderon*

*Department of Biological Sciences*

*Columbia University, New York, NY*

- Discovered a role for the RNA binding protein Squid in microtubule reorganization and axis formation in the *Drosophila* oocyte.
- Participated in a genetic screen for modifiers of Protein Kinase A in *Drosophila* oogenesis.

### Graduate Research | 1999-2002

*Advisor: James Erickson*

*Department of Biological Sciences*

*Columbia University, New York, NY*

- Characterized the undescribed basic leucine-zipper proteins encoded by predicted genes *CG16815* and *CG16813* as potential binding partners of the X chromosome dosage sensor Sisterless-A in *Drosophila*.
- Analyzed Sisterless-A transcriptional activation activity.

### Undergraduate Thesis Research | 1997-1998

*Advisor: Saul Purton*

*Department of Structural and Molecular Biology*

*University College London, London, UK*

- Mapped and characterized the *rpl36* ribosomal protein gene and its highly conserved operon in the plastid genome of *Chlamydomonas reinhardtii*.

### Undergraduate Research | Summers 1996, 1997

*Advisor: Marcia Goldberg*

*Department of Microbiology and Immunology*

*Albert Einstein College of Medicine, Bronx, NY*

- Showed that the protease IcsP is essential for maintenance of asymmetric localization of the outer membrane protein IcsA in *Shigella flexneri*.
- Participated in a genetic screen for chaperones of IcsA.

## TEACHING EXPERIENCE

### Yeshiva University | 2011-present

- NAWO1001 | Freshman Core course "The Natural World: From Molecules to Organisms"
- BIO2601C | Developmental biology lecture and lab

- BIO3521C | Molecular biology lecture and lab
- BIO3513C | Genetics lecture and CURE lab  
53 students trained in Genetics lab Course-based Undergraduate Research Experience (CURE)
- >40 students trained in my laboratory (apprentice-based research internships)  
Philip Hirschprung, Aryeh Levenbrown (Kressel finalist), Ephraim Jacobson, Yehuda Mazin, Matthew Silver, Henry Fuchs (Kressel fellow), Sofia Zypman (high school student), Avishye Moskowitz\*, Yosef Scher†, Will Besharim, Noah Meimoun\*†(YC valedictorian finalist), Ari Rosenthal†, Samuel Intrator† (Kressel fellow), Nicole Soussana (post-baccalaureate), Eliezer Heller\*, Sarah Liberow‡ (Kressel fellow), Yaakov Tzvi Cantor, Shimshon Benji, Jeremy Purow† (Kressel fellow), Leib Wiener†, Zev Narrowe, Benjamin Shulman† (YC valedictorian finalist), Yonatan Rabinovitch, Liam Eliach\*† (YC valedictorian), Aryeh Korman, Jacob Borck† (YC valedictorian finalist), Matthew Lubin, Nathaniel Elkaim, Eitan Dechter\*, Yonatan Schwartz†, Daniel Edelman, Isaac Lipsky\*, Tzvi Fishkin, Adina Wakschlag, Sogol Eizadshenass (post-Masters), Solomon Friedman\*† (Kressel fellow), Yosef Frenkel† (Kressel fellow, YC valedictorian), Benjamin Statman† (Best Honors Thesis 2015 Natural Sciences), Joel Lasker\*, Ryan Fiter (Kressel finalist), Eli Miller\*, Geulah Ben-David (post-baccalaureate), Michael Goldstein

\*Provost's Student Summer Research Scholarship, †Yeshiva College Honors Thesis, ‡Stern College Honors Thesis

## RESEARCH GRANTS

### R15 Academic Research Enhancement Award | NICHD | NIH | 2018-2023

Calcium Independent Phospholipase A2 in *Drosophila*

R15HD080511-02

Direct costs: \$250,000

Indirect costs: \$125,000

### R15 Academic Research Enhancement Award | NICHD | NIH | 2014-2018

Lipid mediators in *Drosophila* spermatogenesis

R15HD080511-01

Direct costs: \$250,000

Indirect costs: \$162,140

### Bertha Kressel Research Scholarship | Yeshiva University | 2023-2024

Henry Fuchs: A motion tracking system to characterize locomotor degeneration in fruit flies

Direct research funds: \$1000

### Bertha Kressel Research Scholarship | Yeshiva University | 2022-2023

Samuel Intrator: Understanding the relationship between *PLA2G6* in somatic cells and the female germline

Direct research funds: \$1000

### Bertha Kressel Research Scholarship | Yeshiva University | 2021-2022

Sarah Liberow: Studying the human neurodegeneration gene *PLA2G6* in the *Drosophila* female germline

Direct research funds: \$1000

### Bertha Kressel Research Scholarship | Yeshiva University | 2020-2021

Jeremy Purow: Understanding the role of *PLA2G6* in neurodegeneration and female fertility

Direct research funds: \$1000

### Bertha Kressel Research Scholarship | Yeshiva University | 2016-2017

Solomon Friedman: Aging, fertility, and sperm storage in *Drosophila* males

Direct research funds: \$800

## Bertha Kressel Research Scholarship | Yeshiva University | 2015-2016

Yosef Frenkel: Phospholipid-derived signaling molecules in *Drosophila*

Direct research funds: \$800

## FELLOWSHIPS, AWARDS, AND ACCOLADES

- Genetics Society of America (GSA) New Faculty Profile (genestogenomes.org/new-faculty-profile-josefa-steinhauer/) | 2016
- Yeshiva University Provost's Summer Research Scholarship | 2012-2022
- F32 Ruth L. Kirchstein National Research Service Award | NIH | 2007-2008  
*For individual postdoctoral fellows F32GM079811 (\$96,472)*
- Peter Sajovic Memorial Prize | Columbia University | 2006  
*For a graduate student doing outstanding work in biology*
- Publication featured in Faculty of 1000 | 2005  
*Steinhauer and Kalderon. Development. PMID: 16291786*
- National Science Foundation Graduate Research Fellowship Award | 2000-2003
- Honorable mention | Predoctoral Fellowships of the Howard Hughes Medical Institute | 2000
- The Francis Hobart Herrick Prize | Case Western Reserve University | 1999  
*For outstanding biological research and academic excellence in biology*
- Barry M. Goldwater National University Student Scholarship | 1997-1999
- President's Academic Scholarship | Case Western Reserve University | 1995-1999

## PUBLICATIONS (†Corresponding author, \*Steinhauer lab trainee)

- Banerjee SJ\*, Schonbrun A\*, Eizadshenass S\*, Benji S\*, Cantor YT\*, Eliach L\*, Lubin M\*, Narrow Z\*, Purow J\*, Shulman B\*, Wiener L\*, and **Steinhauer J.†** 2021. iPLA2-VIA is required for healthy aging of neurons, muscle, and the female germline in *Drosophila melanogaster*. *PLoS One*. 2021 Sep 10;16(9):e0256738. doi: 10.1371/journal.pone.0256738. PMID: 34506510
- Banerjee S\*, Benji S\*, Liberow S\*, and **Steinhauer J.†** 2020. Using *Drosophila melanogaster* to discover human disease genes: An educational primer for use with "Amyotrophic Lateral Sclerosis modifiers in *Drosophila* reveal the Phospholipase D pathway as a potential therapeutic target". Invited contribution. *GENETICS*. 216(3):633-641. doi: 10.1534/genetics.120.303495. PMID: 33158986
- Sepil I, Hopkins B, Dean R, Bath E, Friedman S\*, Swanson B, Ostridge H, Buehner N, Wolfner M, Konietzny R, Thézénas ML, Sandham E, Charles PD, Fischer R, **Steinhauer J**, Kessler BM, and Wigby S.† 2020. Male reproductive ageing arises via multifaceted mating-dependent sperm and seminal proteome declines, but is postponable in *Drosophila*. *Proceedings of the National Academy of Sciences*. Jul 1;202009053. doi: 10.1073/pnas.2009053117. PMID: 32611817
- Delventhal R† and **Steinhauer J.†** 2020. A Course-based Undergraduate Research Experience using *Drosophila melanogaster* to examine neurodegeneration teaches students to think, communicate, and perform like scientists. *PLoS One*. 15(4): e0230912. doi: 10.1371/journal.pone.0230912. PMID: 32282825
- **Steinhauer J†**, Statman B\*, Fagan J, Borck J\*, Surabhi S, Yarikipati, P. Edelman D\*, and Jenny A.† 2019. Comover interacts with the axonemal component Rsp3 and is required for sperm individualization. *Development*. 146: dev179275 doi: 10.1242/dev.179275. PMID: 31391193
- Voices: Perspectives in teaching undergraduate genetics. 2018. Invited interview. *Trends in Genetics*. 34: 1–7, 79-85, 159-164, 247-252, 327-329.
- Kondo S, Vedanayagam J, Mohammed J, Eizadshenass S\*, Pang N, Aradhya R, Siepel A, **Steinhauer J**, and Lai EC.† 2017. New genes often acquire male-specific functions but rarely become essential in *Drosophila*. *Genes and Development*. 31:1841–1846. PMID: 29051389
- **Steinhauer J.†** 2017. Co-culture activation of MAP kinase in *Drosophila* S2 cells. Invited contribution. *Methods in Molecular Biology: ERK signaling*. 1487:235-241. PMID: 27924571
- **Steinhauer J.†** 2015. Separating from the pack: molecular mechanisms of *Drosophila* spermatid individualization. Invited review. *Spermatogenesis*. 5:2, e1041345. PMID: 26413413

- Ben-David G\*, Miller E\*, and **Steinhauer J.**† **2015**. *Drosophila* spermatid individualization is sensitive to temperature and fatty acid metabolism. *Spermatogenesis*. 5:1, e1006089. PMID: 26413411. [Cover photo](#).
- **Steinhauer J**†, Liu HH, Miller E\*, and Treisman JE.† **2013**. Trafficking of the EGFR ligand Spitz regulates its signaling activity in polarized tissues. *Journal of Cell Science*. 126(19): 4469-78. PMID: 23902690
- Legent K, **Steinhauer J**, Richard M, Treisman JE.† **2012**. A Screen for X-Linked Mutations Affecting *Drosophila* Photoreceptor Differentiation Identifies Casein Kinase 1 $\alpha$  as an Essential Negative Regulator of Wingless Signaling. *Genetics*. 190(2):601-16. PMID: 22095083
- **Steinhauer J**, Gijón MA, Riekhof W, Voelker DR, Murphy RC, Treisman JE.† **2009**. *Drosophila* lysophospholipid acyltransferases are specifically required for germ cell development. *Mol Biol Cell*. 20(24): 5224-5235. PMID: 19864461
- **Steinhauer J** and Treisman JE.† **2009**. Lipid-modified morphogens: functions of fats. *Curr Opin Genet Dev*. 19: 1–7. PMID: 19442512
- **Steinhauer J**† and Kalderon D. **2006**. Microtubule polarity and axis formation in the *Drosophila* oocyte. *Dev Dyn*. 235(6): 1455-68. PMID: 16586443
- **Steinhauer J** and Kalderon D.† **2005**. The RNA-binding protein Squid is required for the establishment of anteroposterior polarity in the *Drosophila* oocyte. *Development*. 132(24): 5515-25. PMID: 16291786. [Featured in Faculty of 1000](#).
- **Steinhauer J**, Agha R, Pham T, Varga AW, Goldberg MB.† **1999**. The unipolar *Shigella* surface protein IcsA is targeted directly to the bacterial old pole: IcsP cleavage of IcsA occurs over the entire bacterial surface. *Mol Microbiol*. 32(2): 367-77. PMID: 10231492

## INVITED TALKS

- **Faculty for Undergraduate Neuroscience | 2022 | Online**  
A Course-based Undergraduate Research Experience examining neurodegeneration in *Drosophila* teaches students to think, communicate, and perform like scientists
- **Hofstra University | 2021 | Online**  
Investigating aging and age-related disorders in fruit flies: The neurodegeneration gene *iPLA2-VIA* is required for healthy aging of neurons, muscle, and the female germline.
- **GSA *Drosophila* Research Conference | 2021 | Online**  
*iPLA2-VIA* acts in distinct neuronal subtypes and in muscle to maintain locomotor ability with age, in a partially catalytic-independent manner.
- **NY Fly Eye Club | 2021 | Online**  
*iPLA2-VIA* is required for healthy aging in distinct neuronal subtypes, muscle, and female germline.
- **Nerd Nite | 2020 | Littlefield, Brooklyn, NY**  
Tall tales and small pox: the true story of the first vaccine.
- **St John's University | 2019 | Queens, NY**  
Making sperm in *Drosophila melanogaster*: Comover separates the strands.
- **GSA *Drosophila* Research Conference | 2019 | Dallas, TX**  
A Course-Based Undergraduate Research Experience to investigate the neuronal subtype specificity of *iPLA2*-beta function.
- **Seton Hall University | 2019 | South Orange, NJ**  
Phospholipids and their metabolism in fertility and neurodegeneration.
- **GSA *Drosophila* Research Conference | 2018 | Philadelphia, PA**  
*Early career workshop*. Calcium independent phospholipase A2-beta is non-essential for somatic phospholipid metabolism but is required for maximal lifespan and fertility.
- **Bernard Baruch College | 2017 | New York, NY**  
Phospholipids and their metabolism in fertility.
- **College of Mount Saint Vincent | 2017 | Bronx, NY**  
Phospholipids and their metabolites in fertility.
- **NY Fly Eye Club | 2016 | Memorial Sloan-Kettering Cancer Center, New York, NY**  
Phospholipid-derived signals in *Drosophila* development and physiology.
- **Rutgers Center for Lipid Research | 2016 | Rutgers University, New Brunswick, NJ**  
The Lands Cycle in *Drosophila* development.
- **NYU Langone Medical Center | 2015 | Department of Cell Biology, New York, NY**

Phospholipid-derived signals in *Drosophila* development and physiology.

- **Undergraduate Student Research Presentations | 2014 |** Yeshiva College, New York, NY

Lipid signaling in spermatogenesis.

- **Nerd Nite | 2014 |** Galapagos Art Space, Brooklyn, NY

Yo mama has so much adipose tissue.

- **NY Fly Eye Club | 2013 |** NYU, New York, NY

Trafficking of the EGFR ligand Spitz regulates its activity.

- **Vassar College | 2012 |** Poughkeepsie, NY

Cell-cell communication in the fruit fly: Processing and Presentation of an Epidermal Growth Factor Receptor Ligand.

- **NYU Fly Club | 2012 |** NYU Langone Medical Center, New York, NY

Trafficking of the EGFR ligand Spitz to distinct membrane domains regulates signaling capacity in polarized tissues.

- **GSA *Drosophila* Research Conference | 2012 |** Chicago, IL

Trafficking of the EGFR ligand Spitz to distinct membrane domains regulates signaling capacity in polarized tissues.

- **Undergraduate Student Research Presentations | 2011 |** Yeshiva College, New York, NY

Studying spermatogenesis in the fruit fly: *Drosophila* as a model for human fertility and cell biology.

- **FASEB Research Conference on Protein Lipidation, Signaling and Membrane Domains | 2011 |** Saxtons River, VT

Presentation and Transport of EGFR Ligands in *Drosophila*.

- **NYU Langone Medical Center | 2009 |** Department of Cell Biology, New York, NY

*Drosophila* lysophospholipid acyltransferases are specifically required for germ cell development.

- **Skirball Institute Annual Retreat | 2009 |** Mohonk Mountain House, New Paltz, NY

*Drosophila* lysophospholipid acyltransferases are specifically required for germ cell development. [Presentation Award](#).

- **GSA *Drosophila* Research Conference | 2005 |** San Diego, CA

*squid* functions in AP axis determination in early and mid-oogenesis.

- **Columbia University | 2004 |** Department of Biological Sciences, New York, NY

RNA Binding Proteins and Microtubule Polarization: The Role of Squid in *Drosophila* Axis Formation.

## POSTER PRESENTATIONS (\*Steinhauer lab trainee)

- **GSA *Drosophila* Research Conference | 2024 |** Washington, DC

Rubaia Tasmin, Shahira Helal Arzoo, Eliezer Heller\*, Jeremy Purow\*, Josefa Steinhauer, Surya Jyoti Banerjee. Metabolomics and lipidomics studies reveal altered metabolism in a *Drosophila melanogaster* disease model of PLA2G6-associated Neurodegenerative disease (PLAN).

- **GSA *Drosophila* Research Conference | 2023 |** Chicago, IL

Eliezer Heller\*, Samuel Intrator\*, Sarah Liberow\*, Nicole Soussana\*, Jeremy Purow\*, Omer Birman-Lam, Arie Barkats, Shimshon Benji\*, Yaakov Cantor\*, Michael Gerber, Joshua Hamburger, Zev Hirt, Ezra Mokhtar, Phillip Nagler, Ariel Raskin, Amiel Rimberg, Aaron Stolarov, William Besharim\*, Moshe Carroll, Eitan Edinger, Shay Fishman, Gidon Fox, Tovia Jacobs, Yannay Kaplan, Aaron Lubat, Yehuda Mazin, Noah Meimoun\*, Avishye Moskowicz\*, Jonah Rocheeld, Yechezkel Rothman, Yosef Scher\*, Shlomo Shaulian, Alexander Siegman, Matthew Silver, Yonatan Sragow, Irina Catrina, and Josefa Steinhauer. iPLA2-VIA acts in specific neurons to protect against age-dependent loss of fertility and locomotion.

- **GSA Allied Genetics Research Conference | 2020 |** Online

Surya Banerjee\*, Sogol Eizadshenass\*, Liam Eliach\*, Shimshon Benji\*, Yaakov Tzvi Cantor\*, Jeremy Purow\*, Benjamin Shulman\*, Matthew Lubin\*, Adina Schonbrun\*, and Josefa Steinhauer. Calcium independent phospholipase A2-VIA affects female but not male fertility in *Drosophila melanogaster*, with altered mitochondrial distribution in the developing female germ cells.

- **GSA *Drosophila* Research Conference | 2019 |** Dallas, TX

Josefa Steinhauer, Benjamin Statman\*, Jeremy K. Fagan, Jacob Borck\*, Satya Surabhi, Daniel Edelman\*, and Andreas Jenny. Combover is required for spermatogenesis independently of the planar cell polarity pathway.

- **International Conference on Phospholipase A<sub>2</sub> and Lipid Mediators | 2016 |** San Diego, CA

Eli Miller\*, Geulah Ben-David\*, Yosef Frenkel\*, Sogol Eizadshenass\*, and Josefa Steinhauer. Fatty acid mediators are critical for male fertility in *Drosophila*.

- **Gordon Conference on Molecular and Cellular Biology of Lipids | 2015 |** Waterville Valley, NH

Yosef Frenkel\*, Geulah Ben-David\*, Eli Miller\*, and Josefa Steinhauer. Phospholipase A<sub>2</sub> and phospholipid-derived signaling molecules in *Drosophila* spermatogenesis.

- **FASEB Research Conference** on Protein Lipidation, Signaling and Membrane Domains | **2011** | Saxtons River, VT  
Josefa Steinhauer, Rayshonda Williams, Marilyn Resh, and Jessica Treisman. Presentation and Transport of EGFR Ligands in *Drosophila*.
- **GSA *Drosophila* Research Conference** | **2010** | Washington, DC  
Josefa Steinhauer, Miguel Gijon, Wayne Riekhof, Dennis Voelker, Robert Murphy, and Jessica Treisman. *Drosophila* lysophospholipid acyltransferases are specifically required for germ cell development.
- **Keystone Symposium on Complex Lipids: Signaling, Compartmentalization and Disease** | **2009** | Lake Tahoe, NV  
Josefa Steinhauer, Miguel Gijon, Wayne Riekhof, Dennis Voelker, Robert Murphy, and Jessica Treisman. *Drosophila* lysophospholipid acyltransferases are specifically required for germ cell development.
- **GSA *Drosophila* Research Conference** | **2008** | San Diego, CA  
Josefa Steinhauer and Jessica Treisman. Regulated secretion of the EGFR ligand Spitz via palmitoylation and proteolysis. Honorable Mention.
- **Skirball Institute Annual Retreat** | **2008** | Mohonk Mountain House, New Paltz, NY  
Josefa Steinhauer and Jessica Treisman. Lipid Modification of Extracellular Signaling Ligands. Poster Award.
- **Gordon Conference** on Molecular and Cellular Biology of Lipids | **2007** | Waterville Valley, NH  
Josefa Steinhauer and Jessica Treisman. Lipid Modification of Extracellular Signaling Ligands.
- **GSA *Drosophila* Research Conference** | **2003** | Chicago, IL  
Josefa Steinhauer, Lora Barnhart, and Daniel Kalderon. A Screen for Enhancers of the PKA Oogenesis Polarity Phenotype.

## STUDENT PRESENTATIONS FROM MY LAB

- **Ari Rosenthal** | *PLA2G6* Associated Neurodegeneration Modeled in *Drosophila melanogaster*  
Yeshiva College Honors Program Year End Dinner | Talk | 2023
- **Samuel Intrator and Eliezer Heller** | *iPLA2-VIA* acts in specific neurons to protect against age-dependent loss of fertility and locomotion.  
GSA *Drosophila* Research Conference | Poster | 2023
- **Sarah Liberow and Eliezer Heller** | The neurodegeneration gene *iPLA2-VIA* is required for mitochondrial maintenance in the *Drosophila melanogaster* female germline, with autonomous and non-autonomous components.  
GSA *Drosophila* Research Conference | Poster | 2022
- **Jacob Borck** | Reevaluating the role of the piRNA pathway in germline maintenance in *Drosophila*.  
Yeshiva College Honors Program Year End Dinner | Talk | 2018
- **Yonatan Schwartz** | Fertility and sperm storage in aged *Drosophila* males.  
GSA *Drosophila* Research Conference | Poster | Victoria Finnerty Undergraduate Travel Award | 2018
- **Matthew Lubin** | Calcium independent phospholipase A<sub>2</sub>-beta is non-essential for somatic phospholipid metabolism but is required for maximal lifespan and female fertility.  
GSA *Drosophila* Research Conference | Poster | 2018  
New York Academy of Sciences on Mitochondria in Health and Disease | Poster | 2017
- **Solomon Friedman** | Fertility and sperm storage in aged *Drosophila* males.  
GSA *Drosophila* Research Conference | Poster | 2017  
Yeshiva College Honors Program Year End Dinner | Talk | 2017
- **Adina Wakschlag** | Null mutants for calcium independent phospholipase A<sub>2</sub> show normal male fertility but reduced female fertility.  
GSA *Drosophila* Research Conference | Poster | 2017  
Yeshiva College Undergraduate Student Research Presentations | Talk | 2017  
Stern Undergraduate Research Group Exchange | Talk | 2017
- **Sogol Eizadshenass** | Phospholipases in *Drosophila* development.  
Yeshiva College Undergraduate Student Research Presentations | Talk | 2016
- **Yosef Frenkel** | Phospholipase A<sub>2</sub> and phospholipid-derived signaling molecules in *Drosophila* spermatogenesis.

- GSA *Drosophila* Research Conference | Poster | 2015
- Yeshiva College Honors Program Year End Dinner | Talk | 2016
- Yeshiva College Undergraduate Student Research Presentations | Talk | 2015
- Yeshiva College Summer Research Student Seminar Series | Talk | 2015
- YU Undergraduate Research Abstracts Volume 8 | Abstract | 2014-2015
- **Benny Statman** | Actin regulators in *Drosophila* spermatogenesis.  
Yeshiva College Summer Research Student Seminar Series | Talk | 2015  
Yeshiva College Honors Program Year End Dinner | Talk | 2015
- **Eli Miller** | Lipid signaling in spermatogenesis.  
GSA *Drosophila* Research Conference | [PUI Workshop - selected talk](#) | 2014  
GSA *Drosophila* Research Conference | Poster | 2014  
YU Undergraduate Research Abstracts Volume 7 | Abstract | 2013-2014  
Yeshiva College Research Day | Poster | 2013
- **Ryan Fiter** | Determination of the role of cyst cells in *Drosophila* spermatogenesis using the GAL-4/UAS system.  
YU Undergraduate Research Abstracts Volume 7 | Abstract | 2013-2014
- **Eli Miller** | Trafficking of the EGFR ligand Spitz regulates its activity.  
Yeshiva College Summer Research Student Seminar Series | Talk | 2013  
YU Undergraduate Research Abstracts Volume 6 | Abstract | 2012-2013
- **Geulah Ben-David** | Lipid signaling between soma and germline is required for *Drosophila* spermatogenesis.  
GSA *Drosophila* Research Conference | Poster | 2013  
Yeshiva College Summer Research Student Seminar Series | Talk | 2013  
Yeshiva College Research Day | Poster | 2012  
YU Undergraduate Research Abstracts Volume 6 | Abstract | 2012-2013  
Stern College Women in Science Abstracts | Abstract | 2011-2012
- **Michael Goldstein** | Cell Junctions and Polarity in the *Drosophila* Testis.  
Yeshiva College Summer Research Student Seminar Series | Talk | 2012

## COMMUNITY SERVICE

- **External reviewer | Columbia University | 2024**  
Rachel Misner doctoral thesis: *Signals Influencing the Development of Adult Follicle Stem Cells and their Niche Cells in the Pupal Drosophila Ovary*
- **Invited guest editor | *Frontiers in Cellular Neuroscience: Methods in Cellular Neurophysiology* | 2023**
- **Elected board member | GSA BREW-MOR | 2022-2025**  
Bridging Research and Education Workshops for Model Organism Research  
MicroBREW 2024 subcommittee: Integrating bioinformatics into the undergraduate classroom, >450 registrants
- **Peer reviewer, NIH F31/F32 | 2022**  
Special Emphasis Panel for Fellowships on Cell Biology, Developmental Biology, and Bioengineering
- **Peer reviewer, NIH R15 | 2021**  
Special Emphasis Panel for Genes Genomes and Genetics (GGG) integrated review group
- **Invited co-chair | GSA *Drosophila* Research Conference | 2021**  
Gametogenesis and Reproduction platform session
- **Invited interview guest | RadioWest | 2021**  
The History of Vaccines (<https://radiowest.kuer.org/post/history-vaccines>)
- **Invited interview guest | NPR Planet Money | 2020**  
The Very First Vaccine (<https://www.npr.org/2020/06/04/869798010/the-very-first-vaccine>)
- **Invited interview guest | NBC News | 2020**  
History of Vaccines (<https://www.nbcnews.com/video/from-smallpox-to-the-coronavirus-the-history-of-vaccinations-explained-81494085568>)
- **Unpaid consultant | NPR Planet Money | 2020**  
Episode 977: Where's the Vaccine? (<https://www.npr.org/2020/03/06/812943907/episode-977-wheres-the-vaccine>)



- **Peer reviewer** | Barth Syndrome Foundation Research Grant Program | 2020
- **Panelist** | What Can You Be With a PhD? | 2019
- **Presenter and small group leader** | GSA *Drosophila* Research Conference | 2019  
Research and Pedagogy at Primarily Undergraduate Institutions Workshop
- **Organizer** | GSA *Drosophila* Research Conference | 2019  
Early Career Workshop
- **Unpaid consultant** | NY Times Video | 2019  
Foolhouse Rock: Anti-Vaxx Fallacies (<https://nyti.ms/2Hc54iP>)
- **Organizer** | NY Fly Eye Club | 2017-present
- **Panelist** | Columbia University Biological Sciences Career Initiative | 2014, 2017
- **Peer review** | 2012-present  
*Insects, Development, Biology of Reproduction, International Journal of Molecular Sciences, PLoS Genetics, eLife, Science Advances, Archives of Insect Biochemistry and Physiology, Developmental Dynamics, Developmental Biology, Cell Death and Disease, Scientific Reports, Oncotarget, Fly, BMC Cell Biology, Royal Society Open Biology, BMC Developmental Biology, Current Biology, Genetics*
- **Member** | FlyBase Community Advisory Group | 2014-present
- **Organizer** | GSA *Drosophila* Research Conference | 2014-2015  
Research and Pedagogy at Primarily Undergraduate Institutions Workshop
- **Member** | Genetics Society of America (GSA) | 2005-present

## UNIVERSITY SERVICE

- Division of Natural Sciences and Mathematics Chair | 2021-2024
- Stern College Department of Chemistry faculty search committee | 2021-2022
- Division of Natural Sciences and Mathematics Executive Committee | 2020-2021
- Yeshiva College Curriculum Committee | 2017-2018, 2020-present
- Nobel Prize Nanosecond presentation | 2013, 2015, 2017, 2020
- Yeshiva College Associate Dean search committee | 2018
- Yeshiva College faculty contact | *Pathways to Israel: Graduate Study in the Biological Sciences and Biochemistry, Partnership with Technion University* | 2018-present
- Yeshiva College Biology department faculty search | 2017, 2018
- Marsha Stern Talmudical Academy Honors College Informational and Recruitment Talk | 2015
- Core curriculum | 2014-2015
- University Security Committee | 2013-present

## STUDENT SERVICE

- Undergraduate Honors Thesis Mentor | 2015-present  
*Yosef Scher, Noah Meimoun, Ari Rosenthal, Samuel Intrator, Sarah Liberow, Jeremy Purow, Leib Wiener, Liam Eliach, Benjamin Shulman, Jacob Borck, Yonatan Schwartz, Solomon Friedman, Yosef Frenkel, Benjamin Statman*
- Faculty mentor | Student Undergraduate Research Group Exchange | 2021-present
- Organizer | Summer Research Student Seminar Series | 2013-2015
- Introduction | YU Undergraduate Research Abstracts Volume 7 | 2013-2014
- Undergraduate Honors Thesis Reader | 2013-present
- Applicant Interviewer | YC Honors Program | 2012-present

## DEPARTMENT SERVICE

- Co-Chair | 2023-present
  - *Develop yearly budgets and course schedules*
  - *Oversee equipment maintenance and purchases*

- *Manage departmental staff, mentor faculty members, and recruit adjunct instructors*
- *Organize departmental meetings*
- *Review curriculum, syllabi, and transfer credits*
- Oversaw integration of Neuroscience into the Biology major curriculum
- 6 adjunct instructors recruited and mentored  
*Becky Delventhal (now Assistant Professor at Lake Forest College), Lenzie Ford (now Senior Scientist at UCSB), Molly Gallop (now Assistant Professor at Earlham College), Fabian Munoz Silva, Allison Hall (now Assistant Professor at Regis University), Aryeh Korman (Research Technician at NYU Langone Medical Center)*
- Assessment coordinator | 2016-present
- Manager, two epifluorescent microscopes and one confocal microscope | 2013-present