

Daniel Kaganovich

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Founder

2Prime

Professor of Neurobiology

University of Southampton

Areas of Expertise

ALS disease models, iPSC differentiation, Neuronal Metabolism, RNP Granules, LLPS, Protein Aggregation, Cell Stress Response, Metabolic Adaptation, Intermediate Filaments, Chaperones, Live Cell Imaging, Synucleinopathy, Protein Degradation, Synthetic Biology, Stress Granules, TDP43, Compound Screening

Education

Stanford University *Stanford, CA*

PhD - Molecular Cell Biology

2002-2008

Harvard University *Cambridge, MA*

AB - Biochemistry

1997-2001

Professional Experience

2Prime *Southampton, UK*

Co-Founder

2024-present

University of Southampton *Southampton, UK*

Associate Professor of Neurobiology

2022-present

WaveBreak Therapeutics *Cambridge, UK; Cambridge, MA*

Vice President of Neurobiology

2022-2024

1Base Pharmaceuticals *Boston, MA*

Co-Founder and Chief Scientific Officer

1Base was acquired by WaveBreak Therapeutics

2019-2022

University Medical Center, Göttingen *Göttingen, Germany*

Associate Professor, Department of Experimental Neurodegeneration

2017-2022

Hebrew University of Jerusalem *Jerusalem, Israel*

Assistant Professor, Department of Cell and Developmental Biology

2010-2017

Labmeeting *Palo Alto, CA*

Co-Founder

2007-2010

Fellowships and Awards

ERC Grant from the European Research Council, 2013-2020

American Federation for Aging Research Young Investigator Award in Alzheimer's Disease, 2012

Golda Meir Fellowship Award, 2010

Fulbright Fellowship, 2009

Haas-Koshland Fellowship, 2007

NIH Doctoral Fellowship, 2004

Stanford University Biology Teaching Award, 2003

Harvard College Research Fellowship, 2000

Research Science Institute, 1996

Refereed Journals and Grants

Cell, Molecular Cell, Cell Reports, TiBS, Biophysical Journal, Science, Nature, Scientific Reports, Nature comm., Nature Chemical Biology, Molecular Systems Biology, EMBO, Elife, PLoS Biology, PLoS Genetics, FEBS Letters, Current Biology, Human Molecular Genetics, Lab-on-a-chip, Molecular Biology of the Cell., Journal of Molecular Biology, Stem Cell Reports, Journal of Cell Science, Open Biology, G3, PNAS, Microbial Cell, Molecular Neurology, Journal of Neurochemistry.

Grant Reviewer: ERC, MRC, BBRSC, CNRS, GIF, Birax, UK Wellcome Trust, Research Foundation Flanders, Israel Science Foundation, Australian Research Council, ETH Zurich Research Commission, Swiss National Science Foundation

Publications

Juliane O. Viegas, Gajendra Kumar Azad, Yuan Lv, Tal Paltiel, Sundararaghavan Pattabiraman, Jung Eun Park, **Daniel Kaganovich**, Siu Kwan Sze, Michal Rabani, Miguel Esteban, and Eran Meshorer
CAPRIN1-XRN2-mediated RNA degradation is required for eliminating developmental transcripts during embryonic stem cell differentiation

Developmental Cell 2022 December 9.

Triana Amen and **Daniel Kaganovich**

Resveratrol and stilbene-containing analogs induce Stress Granules with distinct clearing kinetics

Molecular Biology of the Cell 2021 November 1.

Triana Amen and **Daniel Kaganovich**

Stress Granules inhibit fatty acid oxidation by modulating mitochondrial permeability

Cell Reports 2021 June 15.

Laura Mediani, Francesco Antoniani, Veronica Galli, Jonathan Vinet, Arianna Carrà, Ilaria Bigi, Vadreenath Tripathy, Tatiana Tiago, Marco Cimino, Giuseppina Leo, Triana Amen, **Daniel Kaganovich**, Cristina Cereda, Orietta Pansarasa, Jessica Mandrioli, Johannes Buchner, Jared Sternecker, Simon Alberti, Serena Carra
Hsp90-mediated regulation of DYRK3 couples SG disassembly and growth via mTORC1 signaling.

EMBO Reports, 2021 March 19.

Triana Amen and **Daniel Kaganovich**

TOM22 fusions mis-localize to the endoplasmic reticulum

Science Matters 2021 April 19.

Triana Amen and **Daniel Kaganovich**

Small molecule screen reveals joint regulation of Stress Granule formation and Lipid Droplet biogenesis

Frontiers Cell and Developmental Biology: Dynamics of Stress Granules 2021 April 14.

Sundararaghavan Pattabiraman, Gajendra Kumar Azad, Triana Amen, Shlomi Brielle, Jung Eun Park, Siu Kwan Sze, Eran Meshorer, and **Daniel Kaganovich**

Vimentin protects differentiating stem cells from stress

Scientific Reports, 2020 November 11.

Triana Amen and **Daniel Kaganovich**

Fasnall induces atypically transient Stress Granules independently of FASN inhibition

iScience, 2020 October 23.

Triana Amen and **Daniel Kaganovich**

Quantitative photoconversion analysis of internal molecular dynamics in Stress Granules and other Membraneless Organelles in live cells

STAR Protocols, 2020 December 18.

Pratibha Siwach, Evgeniya Levy, Leonid Livshits, Yuri Feldman, **Daniel Kaganovich**

Water is a biomarker of changes in the cellular environment in live animals

Scientific Reports, 2020 June 4.

Triana Amen and **Daniel Kaganovich**

Stress Granules sense metabolic stress at the plasma membrane and potentiate recovery by storing active Pkc1

Science Signaling, 2020, March 17.

Benjamin Cogné, Jamal-Eddine Bouameur, Gaele Hayot, Xenia Latypova, Sundararaghavan Pattabiraman, Amandine Caillaud, Karim Si-Tayeb, Caroline Chariou, Anne Gaignerie, Laurent David, Philippe Bordure, **Daniel Kaganovich**, Stephane Bezieau, Christelle Golzio, Thomas Magin, Bertrand Isidor, Thomas Besnard, and Sébastien Kury

A dominant vimentin variant causes a rare syndrome with premature-aging

European Journal of Human Genetics, 2020, February 17.

Eliezer Keinan, Ayelet Chen Abraham, Aaron Cohen, Alexander I. Alexandrov, Reshef Mintz, Merav Cohen, Dana Reichmann, **Daniel Kaganovich***, Yaakov Nahmias

High-Reynolds Microfluidic Sorting of Large Yeast Populations

Scientific Reports, 2018, Sept. 13. ***corresponding author**

Shlomi Brielle and **Daniel Kaganovich**

Mitochondrial dysfunction in protein conformational disorders.

Invited Review, Journal of Genetics, 2018 July 4.

Daniel Kaganovich

There's a Granule for That: Material Properties of Protein Granules Provide a Platform for Building Diverse Cellular Functions

Invited Review, Trends in Biochemical Sciences, 2017, August 4.

Triana Amen and **Daniel Kaganovich**

Integrative modules for efficient genome engineering in yeast

Microbial Cell, 2017, June 4.

Pratibha Siwach and **Daniel Kaganovich**

Getting stress out of stressed-out stress granules

Invited Review, EMBO Journal, 2017 May 22.

Rotem Gura Sadovsky, Shlomi Brielle, **Daniel Kaganovich***, and Jeremy L. England

Measurement of rapid protein diffusion in the cytoplasm by photo-converted intensity profile expansion

*Cell reports, 2017 March 15. *corresponding author*

Rachel Brown and **Daniel Kaganovich**

Look Out Autophagy, Ubiquilin UPS its Game

Invited Review, Cell, 2016 August 11.

Sandra Malmgren Hill, Xinxin Hao, Johan Grönvall, Stephanie Spikings-Nordby, Per O. Widlund, Triana Amen, Anna Jörhov, Rebecca Josefson, **Daniel Kaganovich**, Beidong Liu, Thomas Nyström

Asymmetric Inheritance of Aggregated Proteins and Age Reset in Yeast Are Regulated by Vac17-Dependent Vacuolar Functions

Cell reports, 2016 June 30.

Gyanendra P. Dubey, Ganesh Babu Malli Mohan, Anna Dubrovsky, Triana Amen, Shai Tsipshtein, Alex Rouvinski, Alex Rosenberg, **Daniel Kaganovich**, Eilon Sherman, Ohad Medalia and Sigal Ben-Yehuda

Revealing the Complexity and Characteristics of Bacterial Nanotubes

Developmental Cell, 2016 February 22.

Michelle L. Oeser, Triana Amen, Cory M. Nadel, Benjamin J. Reed, Ramon D. Jones, Janani Gopalan,

Daniel Kaganovich, and Richard G. Gardner

Dynamic sumoylation of a conserved transcription corepressor prevents persistent inclusion formation during hyperosmotic stress

PLoS Genetics, 2016 January 22.

Triana Amen and **Daniel Kaganovich**

Yeast screening platform identifies FDA-approved drugs that reduce Abeta oligomerization

Invited Review, Microbial Cell, Vol. 3, No. 3, pp. 97 – 100 March 2016.

Shlomi Brielle, Rotem Gura, and **Daniel Kaganovich**

Imaging Stress

Invited Review, Cell Stress and Chaperones, 2015 July 4.

Sundararaghavan Pattabiraman and **Daniel Kaganovich**

Imperfect asymmetry: the mechanism governing asymmetric partitioning of damaged cellular components during mitosis

Invited Review, BioArchitecture, 2015 May 5.

Ofer Moldavski, Triana Amen, Smadar Zaidman, Miriam Eisenstein, Ilana Rogachev, Alexander Brandis,

Daniel Kaganovich*, and Maya Schuldiner

Lipid Droplets are Essential for Efficient Clearance of Cytosolic Inclusion Bodies

*Developmental Cell, 2015 June 8. *corresponding author*

Kelly Brock, Ayelet-chen Abraham, Triana Amen, **Daniel Kaganovich***, and Jeremy England

Structural basis for modulation of quality control fate in a marginally stable protein

*Structure, 2015 July 7. *corresponding author*

Triana Amen and **Daniel Kaganovich**

Dynamic droplets: the role of cytoplasmic inclusions in stress, function, and disease

Invited Review, Cell and Molecular Life Sciences, 2014 Oct 5.

Mikołaj Ogrodnik, Hanna Salmonowicz, Rachel Brown, Joanna Turkowska, Władysław Średniawa,

Sundararaghavan Pattabiraman, Triana Amen, Ayelet-chen Abraham, Noam Eichler, Roman Lyakhovetsky, and

Daniel Kaganovich

Dynamic JUNQ inclusions are asymmetrically inherited in mammalian cell lines through the asymmetric partitioning of vimentin

PNAS, 2014 May 18.

Sandra Tenreiro, Madalena M. Reimão-Pinto, Pedro Antas, José Rino, Donata Wawrzycka, Diana Macedo, Rita Rosado-Ramos, Triana Amen, Meytal Waiss, Filipa Magalhães, Andreia Gomes, Cláudia N. Santos, **Daniel Kaganovich** and Tiago Fleming Outeiro
Phosphorylation modulates clearance of alpha-synuclein inclusions in a yeast model of Parkinson's disease
PLoS Genetics, 2014 May 8.

Pamela S. Gallagher, Michelle L. Oeser, Ayelet-chen Abraham, **Daniel Kaganovich**, and Richard G. Gardner
Cellular maintenance of nuclear protein homeostasis
Invited Review, Cell and Molecular Life Sciences, 2013 Dec 5.

Jacob D. Wikstrom, Tal Israeli, Ety Bachar-Wikstrom, Avital Swisa, Yafa Ariav, Meytal Waiss, **Daniel Kaganovich**, Yuval Dor, Erol Cerasi, Gil Leibowitz
AMPK regulates ER morphology and function in stressed pancreatic β -cells via phosphorylation of DRP1.
Mol Endocrinology. 2013 Aug 26.

Rachel Spokoini, Maya Shamir, Alma Keness, and **Daniel Kaganovich**
4D Imaging of Protein Aggregation in Live Cells
J Vis Exp. 2013 Apr 5;(74). doi: 10.3791/50083.

Maya Shamir and **Daniel Kaganovich**
High-Resolution 4D Imaging in Live Cells
Invited review, Encyclopedia of Analytical Chemistry, 2013 March 15. DOI: 10.1002/9780470027318.a9326

Rachel Spokoini, Ofer Moldavski, Yaakov Nahmias, Jeremy England, Maya Schuldiner, and **Daniel Kaganovich**
Confinement to organelle-associated inclusion structures mediates asymmetric inheritance of aggregated protein in budding yeast
Cell reports, 2012 Oct 25;2(4):738-47. Sept 27 online.

Sarah J. Weisberg, Roman Lyakhovetsky, Ayelet-chen Werdiger, Aaron D. Gitler, Yoav Soen, and **Daniel Kaganovich**
Compartmentalization of SOD1 G93A Aggregates Determines Their Toxicity
PNAS, 2012 Sept 25; 109 (39):15811-15816. Sept 11 online.

Tziona Ben-Gedalya, Roman Lyakhovetsky, Yifat Yedidia, Michal Bejerano-Sagie, Natalya M. Kogan, Marcela Viviana Karpuj, **Daniel Kaganovich** and Ehud Cohen
Cyclosporin A-induced PrP Aggregates are Dynamic Quality Control Cellular Compartments
Journal of Cell Science, 2011 Jun 1;124(11):1891-902.

Jeremy England and **Daniel Kaganovich**
Polyglutamine shows a urea like affinity for unfolded cytosolic protein.
FEBS Letters, 2011 Jan;585(2):381-384.

Maya Amit, Sarah J. Weisberg, Michael Nadler-Holly, Ester Feldmesser, **Daniel Kaganovich**, Keith R. Willison, and Amnon Horovitz
Equivalent mutations in the different subunits of the eukaryotic chaperonin CCT result in dramatically distinct phenotypes
Journal of Molecular Biology, 2010 Aug 20;401(3):532-43.

Daniel Kaganovich, Ron Kopito, and Judith Frydman
Misfolded proteins partition between two distinct eukaryotic quality control compartments
Nature, 2008 Aug 28. 454(7195):1088-1095.

Amie J McClellan, Stephen Tam, **Daniel Kaganovich**, Judith Frydman
Protein quality control: chaperones culling corrupt conformations
Review, Nature Cell Biology, 2005 Aug;7(8):736-41.

Alexei F. Kisselev, **Daniel Kaganovich**, and Alfred L. Goldberg
Binding of hydrophobic peptides to several regulatory sites promotes peptide hydrolysis by all active sites of 20S proteasomes: evidence for peptide-induced channel opening in the α -rings
Journal of Biological Chemistry, 2002 June 21; 277(25): 22260-70.

Cain H. Yam, Wai Yi Siu, **Daniel Kaganovich**, Joan V. Ruderman, and Randy Y. C. Poon.
Cleavage of human cyclin A at R70/R71 by the bacterial protease OmpT
Proceedings of the National Academy of Sciences, 2001 Jan. 16. Vol. 98: 497-501.

PATENTS

Compounds and compositions for modulating lipid metabolism March 30, 2021

Invited talks

August 22, 2023	<i>International Conference on Yeast Genetics and Molecular Biology, Florence, Italy</i>
June 28, 2022	<i>UK Dementia Research Institute, London, UK</i>
November 30, 2021	<i>Keynote Talk: 4th Annual ALS ONE Research Symposium, Boston MA, USA</i>
September 19, 2019	<i>Laboratory of Cardiovascular Science, NIA, Baltimore, MD, USA</i>
May 21, 2019	<i>Conference: biology, cancer, and neurodegeneration, Rio de Janeiro, Brasil</i>
October 6, 2017	<i>9th Annual Alliance for Healthy Aging Conference, Mayo Clinic, Rochester, Minnesota, USA</i>
January 27, 2018	<i>International Federation for Cell Biology, Hyderabad, India</i>
February 26, 2017	<i>Next Generation ALS Research, Weizmann Institute, Israel</i>
September 12, 2016	<i>Jacques Monod Conference on Protein Misfolding and Disease, Brittany, France</i>
September 7, 2016	<i>Pasteur Institute, Paris, France</i>
July 5, 2016	<i>Symposium on Microbial Organelles and Interactions, Tel Aviv University, Israel</i>
June 30, 2016	<i>School of Medicine, Tsinghua University, Beijing, China</i>
June 14, 2016	<i>Invited Talk, Gordon Research Conference on Intermediate Filaments, Vermont, USA</i>
June 5, 2016	<i>American Federation for Aging Research conference, Santa Barbara, USA</i>
April 14, 2016	<i>Keynote Lecture: New Trends in Biological Microscopy (25th Pasteur-Weizmann Meeting)</i>
February 11, 2016	<i>Department of Biochemistry and Biophysics, UPenn, Pennsylvania, USA</i>
February 8, 2016	<i>Department of Cell Biology, Harvard Medical School, USA</i>
January 25, 2016	<i>Department of Biology, University of Copenhagen, Denmark</i>
January 14, 2016	<i>Department of Neurobiology, Tel Aviv University, Israel</i>
December 22, 2015	<i>Faculty of Medicine, Technion, Haifa, Israel</i>
June 26, 2015	<i>European Research Conference on Intermediate Filaments, Stockholm, Sweden</i>
March 26, 2015	<i>Institute of Neuropathology, Zurich University Hospital, Switzerland</i>
March 26, 2015	<i>Postdoc Association Invited Talk, Institute of Biochemistry ETH Zurich, Switzerland</i>
March 16, 2015	<i>Department of Biology, Technion, Haifa, Israel</i>
March 10, 2015	<i>Conference on scientific cooperation between Lower Saxony and Israel, Hanover, Germany</i>
February 26, 2015	<i>Department of Pharmaceutical Chemistry, UCSF, San Francisco, California, USA</i>
February 25, 2015	<i>Department of Chemical and Systems Biology at Stanford, California, USA</i>
February 15, 2015	<i>EMBO Workshop on Neurodegeneration, Jerusalem, Israel</i>
December 31, 2014	<i>Department of Biological Chemistry, Weizmann Institute of Science, Rehovot, Israel</i>
November 20, 2014	<i>Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, Germany</i>
November 3, 2014	<i>7th International Meeting on Heat Shock Proteins in Biology and Medicine, Washington DC</i>
October 29, 2014	<i>HUJI-UMG Workshop on Mechanisms of Neurodegeneration, Jerusalem, Israel</i>
June 15, 2014	<i>Invited Talk, Gordon Research Conference on Intermediate Filaments, Vermont, USA</i>
May 18, 2014	<i>Department of Biochemistry, Hebrew University Medical School, Jerusalem, Israel</i>
November 18, 2013	<i>Minerva conference on mRNA and Protein Trafficking, Rehovot, Israel</i>
October 13, 2013	<i>Department of Neurobiology, Hebrew University Medical School, Jerusalem, Israel</i>
September 30, 2013	<i>Israeli Biophysical Society Annual Meeting, Jerusalem, Israel</i>
August 22, 2013	<i>Department of Microbiology, Gothenburg University, Gothenburg, Sweden</i>
August 16, 2013	<i>Department of Gene Technology, Tallinn Technical University, Tallinn, Estonia</i>
August 12, 2013	<i>Neuroscience Center, University of Helsinki, Helsinki, Finland</i>
June 25, 2013	<i>Israel Live Imaging Forum, Beer Sheva, Israel</i>
April 4, 2013	<i>Cell and Molecular Neuroscience Unit, Lisbon Faculty of Medicine, Portugal</i>
December 24, 2012	<i>Department of Biochemistry and Molecular Biology, Tel Aviv University, Israel</i>
August 29, 2012	<i>Adler Symposium on Protein Folding Quality Control, Gothenburg, Sweden</i>
May 20, 2012	<i>Brain Malfunction and Degeneration Conference, Jerusalem, Israel</i>
April 4, 2012	<i>Department of Pathology, Sackler School of Medicine, Tel Aviv University, Israel</i>

Daniel Kaganovich

March 29, 2012	<i>Department of Biochemistry, Indiana University, Bloomington, IN</i>
February 16, 2012	<i>Department of Biochemistry, Boston University Medical School, Boston, MA</i>
February 13, 2012	<i>Department of Biochemistry and Molecular Biology, University of Nevada, Reno</i>
December 12, 2011	<i>National Institute of Biotechnology in the Negev, Ben Gurion University, Israel</i>
November 30, 2011	<i>Faculty of Life Sciences, Bar-Ilan University, Ramat-Gan, Israel</i>
August 26, 2011	<i>Cell Stress Society Focus Group on Stress and Healthy Aging, Quebec, Canada</i>
August 21, 2011	<i>Cell Stress Society International Conference, Quebec, Canada</i>
June 25, 2011	<i>Alzheimer's Disease Conference, Tel Aviv, Israel</i>
February 11, 2011	<i>Federation of Israel Societies for Experimental Biology Conference, Eilat, Israel</i>
December 15, 2010	<i>Dept. of Cell and Developmental Biology, UPenn Medical School, Philadelphia, PA</i>
May 30, 2010	<i>Department of Cellular Biochemistry, Hadassah Medical School, Jerusalem, Israel</i>
April 30, 2010	<i>Department of Cell Biology, Harvard Medical School, Boston, MA</i>
June 22, 2009	<i>Molecular Genetics Department, Weizmann Institute of Science, Rehovot, Israel</i>
May 26, 2009	<i>Structural Biology Department, Weizmann Institute of Science, Rehovot, Israel</i>
May 1, 2009	<i>Department of Biochemistry, UCSF, San Francisco, California</i>
November 20, 2008	<i>Lewis Sigler Institute, Princeton University, Princeton, New Jersey</i>

Organization of *International Conferences*

Organizer: 2017 Batsheva de Rothschild Seminar: **Nuclear Lamina and Nuclear Organization**

Organizer: 2015 EMBO Meeting: **Macromolecular Assemblies: Crossroads of Stress and Function**

Session chair: 2013 Cell Stress Society International Conference **Stress Proteins in Biology and Medicine**

Organizer of 2012 Hebrew University – University of Gottingen Symposium on neurodegenerative diseases

Research Support**ERC european research council Starting Grant** (PI Daniel Kaganovich)

Project Title: Harnessing the Dark Side of Protein Folding: Manipulating Aggregation for Recombinant Protein Production.

Award Amount: \$2,400,000

Duration of Award: October 2014 - January 2020 (budget extended beyond funding period)

EU Joint Program in Neurodegenerative Disease Research (JPND) (co-PI Daniel Kaganovich)

Project Title: Stress granules in motor neurons: towards a mechanistic understanding of ALS.

Joint Project: Simon Alberti (PI), Serena Carra, Angelo Poletti, Nico Dantuma, Jared Sternecker

Award Amount: \$2,011,698

Duration of Award: January 2016 - December 2019

Ministry of Science, Technology, and Space: Israeli-Italian Grant for Scientific and Technological Cooperation (PI Daniel Kaganovich)

Project Title: Dynamics and function of stress granules and other protein-RNA assemblies in ALS.

Joint Project: Serena Carra, University of Modena

Award Amount: \$200,000

Duration of Award: October 2016 - March 2019

Israel Science Foundation: Joint Israel-India Grant (PI Daniel Kaganovich)

Project Title: Deciphering the structural role of glycogen in neuronal autophagy and neurodegeneration.

Award Amount: \$320,000

Duration of Award: October 2016 - September 2019

German Israeli Foundation (GIF) (PI Daniel Kaganovich)

Project Title: Building a molecular map of alpha-synuclein toxicity.

Joint Project: Tiago Outeiro and Silvio Rizzoli from the University of Gottingen

Award Amount: \$182,400

Duration of Award: January 2014 - December 2016

Niedersachsen-Israel Research Cooperation Program (PI Daniel Kaganovich)

Project Title: Membrane binding on a-synuclein aggregation and cell-to-cell propagation in Parkinson's.

Joint Project: Tiago Outeiro from the University of Gottingen

Award Amount: \$300,000

Duration of Award: January 2014 - December 2017

Abisch-Frenkel Foundation for the Promotion of Life Sciences (PI Daniel Kaganovich)

Project Title: The cell biology of Tauopathy: examining the neuron-specific toxicity of Tau aggregation.

Award Amount: \$45,000

Daniel Kaganovich

Duration of Award: August 2015 - July 2017

American Federation for Aging Research Rosalinde and Arthur Gilbert Foundation and The Diane and Guilford Glazer Foundation in Partnership with the American Federation for Aging Research New Investigator Award in Alzheimer's Disease (PI Daniel Kaganovich)

Project Title: The Cell Biology of Protein Aggregation in a *C. elegans* Alzheimer Model.

Award Amount: \$100,000

Duration of Award: July 2012 - June 2014

Israel Science Foundation (PI Daniel Kaganovich)

Project Title: Quality control of protein folding and aggregation.

Award Amount: \$292,500

Duration of Award: October 2011 - September 2015

E-RARE-2 Consortium Grant for Transnational Projects on Rare Diseases (co-PI Daniel Kaganovich)

Project Title: Understanding Pathological Protein Processing and Toxicity in Machado-Joseph Disease.

Joint Project: Philipp Koch (PI), Dineke Verbeek, Luis Pereira de Almeida, and Thorsten Schmidt

Award Amount: \$1,200,000

Duration of Award: January 2013 – December 2015

Abisch-Frenkel Foundation for the Promotion of Life Sciences (PI Daniel Kaganovich)

Project Title: Amyloid management in yeast through spatial organization of aggregates in the cytosol.

Award Amount: \$45,000

Duration of Award: August 2011 - July 2013

German Israeli Foundation (GIF) (PI Daniel Kaganovich)

Project Title: Asymmetric inheritance of aggregate inclusions in yeast.

Award Amount: \$57,000

Duration of Award: January 2012 - December 2012

National Institute for Psychobiology in Israel (PI Daniel Kaganovich)

Project Title: Determine the basis for the neuronal cell-type specificity of aggregation-induced toxicity:

Examining the effect of neural stimulation and activity on protein folding stress and oxidative stress.

Award Amount: \$25,000

Duration of Award: October 2011 - September 2012

Mentorship and Training

Postdocs

2010-2013 Roman Lyakhovetsky (current position: Clinical Safety Officer at PSI CRO)

2013-2020 Pratibha Siwach (PBC India-Israel Postdoctoral Fellow)

PhD Students

2013-2020 Triana Amen (current position: Assistant Professor, University of Southampton)

2014-2021 Sundaraghavan Pattabiraman (current position: CEO at CellBrew)

2014-2018 Shlomi Brielle (current position: Postdoctoral Fellow at Harvard Stem Cell Institute)

2013-2018 Rachel Brown (current position: Researcher at Princeton University)

2011-2017 Ayelet-chen Abraham

Co-advised PhD students

Mikolaj Ogrodnik (current position: Assistant Professor, Ludwig Boltzmann Research Group, Vienna)

James Owen Andrews, Ibrahim Cisse lab at MIT

Eliezer Keinan, Kobi Nahmias lab at HUJI

Ofer Moldavski, Maya Schuldiner lab at Weizmann

Diana Lazaro, Tiago Outeiro lab at U. Göttingen

Undergraduate students

2010-2013 Maya Shamir 2010-2013 Noam Eichler

2012-2015 Vardit Levine 2014-2016 Moriya Elihu

2016-2017 Eric Goldberg 2016-2017 Lily Ayoun

Study abroad students through the Rothberg School

Sarah Kornblau 2011, Margaret Cuniff 2012, Rebecca Khalandovsky 2011, Hanna Salmonowicz 2013, Jarrod Rulney, 2014, Idan Berman 2014-2015, Aaron Birnbaum summer 2015, Ezra Roberts 2017, Alexander Alexandrov (EMBO Fellowship) 2017.

Courses taught at HU and UMG

Generation of CRISPR/Cas9 knockout and tagged cell lines (grad students)

Introduction to Cell biology: From Cell to Organism (Undergrad)

Advanced Cell Biology (Undergrad)

Avnei Pina Course – Biology of Aging (undergrad)

Life and death of proteins (Undergrad and Masters seminar course)

Imaging lab course workshop for advanced undergrad students (undergrad)

Lectures in course on Neurodegenerative Disease at ICNC (grad students)

Lectures in course on the Road to Successful Publications: Scientific Writing (Doctoral students)

The molecular basis of neurodegenerative disease, guest course at University of Coimbra (grad students)

Additionally, I have:

Authored a patent for ALS new method of treatment and therapeutic compounds (# 63/168,023)

Developed new tools for genome engineering in yeast (Amen and Kaganovich., 2017).

Developed new protocols for TIRF imaging in yeast and bacteria (Dubey et al.,2017).

Developed new protocols for yeast imaging with Structured Illumination Microscopy and Light Sheet Illumination Microscopy.

Developed a novel approach for measuring protein diffusion in live cells, and characterized anomalous diffusion phenomena (Gura et al., 2017).

Developed new protocols for proximity-associated biotinylation in yeast (Amen and Kaganovich, 2020).