**JEAN M. MULCAHY LEVY, M.D.**

Associate Professor of Pediatrics

University of Colorado School of Medicine

Division of Pediatric Hematology, Oncology, and Bone Marrow Transplant

Center for Cancer and Blood Disorders, Children’s Hospital Colorado

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**EDUCATION and TRAINING**

University of Portland, Portland, OR

 Bachelor of Science in Biology

 August, 1994- May, 1998

Oregon Health & Science University, Portland, OR

 Doctor of Medicine

 August, 1999- June, 2003

St. Jude Children’s Hospital, Memphis, TN

 Professional Oncology Education Program

 June, 2000-August, 2000

University of Arizona, Tucson, AZ

 Residency in Pediatrics

 July, 2003-June, 2006

Baylor College of Medicine, Houston, TX

American Society of Tropical Medicine and Hygiene Approved Pre-requisite Course for Certificate of Knowledge in Clinical Tropical Medicine and Traveler’s Health

 August, 2006

Children’s Hospital Colorado, Aurora, CO

Fellowship in Pediatric Hematology, Oncology, and Bone Marrow Transplant

 July, 2008-June, 2012

**ACADEMIC APPOINTMENTS**

Pediatric AIDS Corps Physician

Baylor College of Medicine-Abbot Fund Children’s Clinical Center of Excellence, Malawi

July, 2006-August, 2007

Instructor of Pediatrics

 Children’s Hospital Colorado, Center for Cancer and Blood Disorders

 July, 2012-June, 2015

Assistant Professor of Pediatrics

University of Colorado Anschutz Medical Campus

Children’s Hospital Colorado, Center for Cancer and Blood Disorders

 July, 2015- June, 2019

Assistant Professor of Pharmacology (Secondary Appointment)

 University of Colorado Anschutz Medical Campus

 May, 2017- June, 2019

Associate Professor of Pediatrics

University of Colorado Anschutz Medical Campus

Children’s Hospital Colorado, Center for Cancer and Blood Disorders

 July, 2019 - Current

Associate Professor of Pharmacology (Secondary Appointment)

 University of Colorado Anschutz Medical Campus

 July, 2019- Current

**OTHER PROFESSIONAL POSITIONS**

Scientific Advisory Board Member, Cancer League of Colorado

 2017-2019

Scientific Research Advisor, Sam Day Foundation

 2022-Current

**HONORS and AWARDS**

1997 American Heart Association Research Fellowship

1998 *Magna Cum Laude*, University of Portland

2005 Maurice Zee Compassionate Pediatric Resident Aware, University of Arizona

2006 Pediatric Resident Award for Research, University of Arizona

2006 Pediatric Resident Continuity Clinic Award

2010 American Society of Clinical Oncology Trainee Travel Award

2011 AACR Molecular Biology in Clinical Oncology American Association for Cancer Research Workshop Attendee

2012 Plenary Speaker, International Symposium on Pediatric Neuro-Oncology

2012 International Symposium on Pediatric Neuro-Oncology, Outstanding Abstract Award

2009-2018 Grant Recipient, National Institutes of Health Loan Repayment Program

2018 Finalist, Robert J. Arceci Innovation Award, St. Baldrick’s Foundation

2018 Boettcher Webb-Waring Biomedical Research Award

**PROFESSIONAL SOCIETY MEMBERSHIPS**

2006-Current American Academy of Pediatrics

2008-Current American Society of Pediatric Hematology and Oncology

2008-Current Children’s Oncology Group

2012-Current American Association for Cancer Research

2012-Current American Society of Clinical Oncology

2012-Current Society of Neuro-Oncology

2019-Current University of Colorado Cancer Center CCSG Member

**MAJOR SERVICE RESPONSIBILITIES**

2008-2024 Pediatric Advanced Life Support Instructor, Children’s Hospital Colorado Life Support Education Program

2013-2022 Center for Cancer and Blood Disorders Faculty Representative, Children’s Hospital Colorado Code Committee- Escalation of Care Taskforce

2015-Current Director of Neuro-Oncology High Dose Therapy/Autologous Transplant Program Children’s Hospital Colorado

2017-2018 Organizing Committee and Co-Chair for Sunrise Sessions, International Symposium on Pediatric Neuro-Oncology

2017-2020 Co-organizer, Childhood Cancer Research Emphasis Area, Center for Cancer and Blood Disorders Research Conference

2017-2022 Pediatric Disease Site Leader, Protocol Review and Monitoring System, University of Colorado Cancer Center.

2018-2020 Clinical Lead, Pediatric Neuro-Oncology, Children’s Hospital Colorado

2018-2022 Center for Cancer and Blood Disorders Faculty Representative, Children’s Hospital Colorado Sepsis Clinical Improvement Team

2019-Current Pediatric Low-Grade Glioma Coalitions, International committee of experts to help inform research and clinical goals in pediatric low-grade gliomas.

2020-2022 Children’s Hospital Colorado, Scientific Advisory Committee for Sars-CoV-2 Response

2022-Current Inpatient Medical Director, Center for Cancer and Blood Disorders

2023-Current RAPID Program CCBD Lead

**LICENSURE and BOARD CERTIFICATION:**

Colorado Medical License,

Original 6/15/07, Most recent renewal: 5/1/21- 4/30/23

New Mexico Medical License

 Original 8/14/2020-07/01/2024

Arizona Medical License,

 Original 5/15/06 (expired)

Malawi National Antiretroviral Treatment Certification, 2006

Pediatric Advance Life Support Instructor Certification, 2008-present

American Board of Pediatrics Certified, October 2007

American Board of Pediatrics Sub-Board Certified, Pediatric Hematology/Oncology, April 2013

**REVIEW AND REFEREE WORK**

2013- Current Peer Reviewer, St. Baldrick’s Foundation Research Grant Review Committee

2014 Ad Hoc Peer Reviewer, *International Journal of Molecular Sciences*

2014- Current Ad Hoc Peer Reviewer, *Pediatric Blood and Cancer*

2014- Current Ad Hoc Peer Reviewer, *Autophagy*

2015 Ad Hoc Peer Reviewer, *Children*

2015- Current Ad Hoc Peer Reviewer, *Oncotarget*

2015- Current Ad Hoc Peer Reviewer*, Scientific Reports*

2016 Ad Hoc Peer Reviewer, *Oncology Letters*

2017 Ad Hoc Peer Reviewer, *Bone Marrow Transplantation*

2017 Ad Hoc Peer Reviewer, *Nature Medicine*

2017- Current Ad Hoc Peer Reviewer, *PLOS ONE*

2017- Current Peer Reviewer, Pediatric Cancer Research Foundation

2017 Ad Hoc Peer Reviewer, JCO Precision Oncology

2017-2019 Peer Reviewer, Cancer League of Colorado

2019 Ad Hoc Peer Reviewer, *Cancer Research*

2019 Peer reviewer, KWF Kankerbestrijding (Dutch Cancer Society)

2019-Current Peer Reviewer, Peer Reviewed Cancer Research Program (PRCRP) for the Department of Defense Congressionally Directed Medical Research Programs (CDMRP)

2019-2024 Invited Peer Reviewer, National Institutes of Health

2024-Current Standing Member of the Mechanisms of Cancer Therapeutics (MCTC) Study Section

**INVITED LECTURES AND PRESENTATIONS**

2013 Department of Pediatrics Basic and Translational Pediatric Research Seminar Series *Autophagy Inhibition and Brain Tumors: The Potential for Use in Pediatrics*

2014 Autophagy: From Basics to Clinical Application Symposium

 The Interleukin Foundation and the Division of Infectious Diseases, University of Colorado

 *Autophagy as a Target for Cancer Therapy*

2015 University of Colorado Developmental Therapeutics Retreat

 *Autophagy Inhibition and Re-sensitization of Mutant BRAF Tumor*

2016 Centro de Investigación Biomédica de Oriente (CIBIOR) Research Series

*Targeting Autophagy to Improve Pediatric Brain Tumor Therapy*

University of Michigan Pediatric Neuro-Oncology Precision Medicine Conference

*Overcoming Resistance Mechanisms to Targeted Therapies in Low-Grade Glioma*

Children’s Oncology Group Fall Meeting

*Overcoming Resistance Mechanisms to Targeted Therapies in Low-Grade Glioma*

Huntsman Cancer Institute of the University of Utah

*Autophagy Inhibition to Improve Pediatric Brain Tumor Therapy*

University of Colorado Cancer Center Symposium

*Targeting Autophagy to Improve Brain Tumor Therapy*

2017 University of Colorado Department of Pharmacology

Candidate for Secondary Faculty Appointment

*Autophagy Inhibition to Improve Survival in Childhood Brain Tumors*

University of Colorado Department of Pediatrics, Center for Cancer and Blood Disorders

Childhood Cancer Research Emphasis Area

*Autophagy Inhibition to Improve Survival in Childhood Brain Tumors*

Children’s Hospital of Philadelphia

Division of Oncology Center for Childhood Cancer Research

*Autophagy Inhibition to Improve Survival in Childhood Brain Tumors*

Society of Neuro-Oncology

22nd Annual Meeting

*Analysis of Paired BRAFV600E Mutant Glioma Patient Sampels Identifies Novel Resistance Mechanisms to Targeted BRAF Inhibition*

2018 18th International Symposium on Pediatric Neuro-Oncology

 *Analysis of Paired BRAFV600E Mutant Glioma Patient Sampels Identifies Novel Resistance Mechanisms to Targeted BRAF Inhibition.*

The Banbury Center, Cold Springs Harbor Laboratory

 Autophagy and Cancer Meeting

 *Pre-clinical Development of Autophagy Inhibition for Brain Tumors*

Hospital for Sick Children, Division of Hematology Oncology

 Toronto, Ontario

 *Pre-clinical and Clinical Development of Autophagy Inhibition for Brain Tumors*

2019 University of Colorado Cancer Center Symposium Series

 *Harnessing the Power of Available Drugs for Pediatric Brain Tumors*

European Molecular Biology Organization

 Autophagy: From Molecular Principles to Human Disease

 *Successful Implementation of Autophagy Directed Therapy in Pediatric Patients*

2020 University of Colorado Department of Pediatrics,

Pediatric Basic & Translational Research Seminar

 *Development of New Therapies for Pediatric Brain Tumors*

19th International Symposium on Pediatric Neuro-Oncology

 *Clinical and Molecular Characterization of a Multi-institutional Cohort of Pediatric Spinal Cord Low-grade Gliomas*

 American Society for Pharmacology and Experimental Therapeutics at Experimental Biology Annual Meeting

 Symposium*: Targeting Autophagy in Cancer* Panel Speaker

2021 6th Biennial Pediatric Neuro-Oncology Research Conference,

Education Day Seminar

 *BRAF Gliomas Across the Ages: Clinical Targeting of BRAF Gliomas*

2022 International Pediatric Low Grade Glioma Coalition Meeting

 *Pre-clinical Support for Autophagy Inhibition in the non-V600E Population*

2023 7th Biennial Society of Neuro-oncology **Pediatric Neuro-Oncology Research Conference**

*Characterization of the Tumor Microenvironment in Pediatric Low-Grade Glioma*

Muhimbili Orthopedic and Neurosurgical Institute in collaboration with the University of Colorado

2nd Neuro-Oncology International Conference (Tanzania)

*Pediatric Neuro-Oncology Expert Content Provider*

A148th American Neurologic Association Annual Meeting

 *Autophagy and Targeted Therapy in Brain Tumors*

American Society of Pediatric Hematology Oncology

 *Fellows Forum: How to Find and Get the Best Out of A Mentor*

Children’s Hospital Colorado Schwartz Rounds

 *No Strings Attached:  Providing Exceptional Care Despite a Dismal Prognosis*.

2024 National Institutes of Health, National Cancer Institute,

Pediatric Oncology Branch Research Seminar Series

*Harnessing the Power of Available Drugs for Pediatric Brain Tumors*

Hugo’s Fellowship Fund

*New Therapy Development for Atypical Teratoid Rhabdoid Tumors*

International Pediatric Low-Grade Glioma Consortium Meeting

*PBTC-055 Phase I/II trial of Dabrafenib, Trametinib, and Hydroxychloroquine Trial*

Super Mito Group Seminar Series

*BH3 and ROR1- Roles in Resistance to Targeted Therapies in Pediatric Brain Tumors*

2025 Penn State College of Medicine

 Four Diamonds Pediatric Cancer Seminar Series

 *Adaptive Resistance Mechanisms in Targeted Therapy for Pediatric Brain Tumors*

**TEACHING RECORD**

Small Group Facilitator (IDPT5003), Problem Based Learning, Blood and Lymph Section

University of Colorado School of Medicine, 2009-present

Attending Physician, Pediatric Oncology and Bone Marrow Transplant Inpatient Services, Supervision and bedside teaching of fellows, residents, and nurse practitioner students.

Children’s Hospital Colorado, 2012 – present

Attending Physician, Pediatric Neuro-Oncology Outpatient Service, Supervision and teaching of fellows, residents and nurse practitioner students.

Children’s Hospital Colorado, 2012 – present

Foundations of Doctoring (IDPT 7655),

Preceptor for Michelle Kuei, MD

University of Colorado School of Medicine, 2013-2016

Preceptor for Simon Feseha, MD Candidate

University of Colorado School of Medicine, 2017-2021

Escalation Curriculum Facilitator, Rising PL2 and Rising PL3 Pediatric Residents

 Children’s Hospital Colorado, 2017

Molecules to Medicine Lecturer, Phase I Essential Core Curriculum for MS1 Students

University of Colorado School of Medicine, 2017

Facilitator, Critical Care and Procedures Bootcamp

Children’s Hospital Colorado, 2015-2018

Featured lecturer for Autophagy and Programed Cell Death Signaling.

PHCL 7606: Receptors and Cell Signaling

 University of Colorado Graduate School, 2022-2024

**MENTORING POSITIONS**

Summer Research Intern. Sydney Grob, undergraduate, Duke University

Publication: **Grob, ST**; Mulcahy Levy, JM. *Improving diagnostic and therapeutic outcomes in pediatric brain tumors.* Mol Diagn Ther, 2017 Sep 12.DOI 10.1007/s40291-017-0299-3

Senior Honor’s Thesis: *Exploring pediatric brain tumors with a multi-modal genomic and molecular approach.* Duke University

Currently MD/PhD student, Tufts University School of Medicine

Summer Research Intern. Caroline Soane, undergraduate, Stanford University

Poster Presentation, International Symposium on Pediatric Neuro-Oncology, 2018. Morin, A; **Soane, C**; Pierce, A; Alimova, I; Desmarais, M; Zahedi, S; Vibhakar, R; Griesinger, A; Green, A; Hoffman, L; Mulcahy Levy, JM. “Validation of Proteasome Inhibition as a Threapeutic Target in Atypical Teratoid/Rhabdoid Tumors.”

Graduated with her MD, Vanderbilt University School of Medicine

Currently an Internal Medicine Resident, Columbia University Vagelos College of Physicians and Surgeons

Medical Student Class of 2021 Research Track. Eliza Baird-Daniel

Top Poster, 33rd Annual Student Research Forum :*The assessment of therapeutic autophagy in NF1 mutated tumors.*

Graduated with her MD from the University of Colorado School of Medicine

Currently a Neurosurgery Resident at the University of Washington School of Medicine

Career Mentor,

2011- 2021 Lindsey Hoffman, Assistant Professor, University of Colorado

 Successful completion of Neuro-oncology Fellowship, Cincinnati Children’s Hospital

 Recruited as Head of Pediatric Neuro-oncology, Phoenix Children’s Hospital

 2015- present Amanda Winters, Fellow, University of Colorado

 Promoted to Instructor Fellow, July 2017

 Awarded Cancer League of Colorado Research Award, 2017

 Awarded St. Baldrick’s Foundation Fellowship Award, 2017-2019

 Promoted to Assistant Professor, 2019

 Awarded American Cancer Society Mentored Research Award, 2022

 Awarded K08 Funding from the NIH, 2023

 2016- present Jenna Sopfe, Fellow, University of Colorado

 Awarded Thrasher Foundation Early Career Research Award, 2017

 Awarded Cancer League of Colorado Fellowship Award, 2017

 Promoted to Assistant Professor, 2018

2016- present Nathan Dahl, Fellow, University of Colorado

 First author publication in Journal of Neuropathology & Experimental Neurology, 2017

**Dahl, NA**; Luebbert, T; Loi, M; Neuberger, I; Handler, MH; Kleinschmidt-DeMasters, BK; Mulcahy Levy, JM. *Chordoma occurs in young children with tuberous sclerosis.* JNEN, doi: 10.1093/jnen/nlx032

Awarded Cancer League of Colorado Research Award, 2018

Awarded St. Baldrick’s Foundation Fellowship Award, 2019

Awarded Department of Defense Career Development Award, 2019

Awarded NIH K08 Mentored Clinical Scientist Research Award, 2021

 2016-2021 Christina G. Towers, Post-doctoral Researcher, University of Colorado

Co-mentor to post-doctoral researcher in the lab of Dr. Andrew Thorburn, providing clinical and translational research experience to complement her basic science research.

Grants: K99/R00 awarded in 2020

*Therapeutic Targeting of Autophagy-Dependent Cancer*

Publications: Mulcahy Levy, JM; **Towers, CG**; Thorburn, A. *Targeting autophagy in cancer.* Nat Rev Cancer, 2017 Sep;17(9):528-542. doi: 10.1038/nrc.2017.53

Currently Assistant Professor, Molecular and Cell Biology, Salk Institute for Biologic Studies

 2017- present Kelly Faulk, Fellow, University of Colorado

Awarded Baldrick’s Foundation Fellowship, 2018

2017-present Jessica Lake, Fellow, University of Colorado

Successful application to multiple American Association for Cancer Research fellowship grants.

Recruited as an Assistant Research Physician, Pediatric Oncology Branch, Center for Cancer Research, National Cancer Institute, National Institutes of Health.

2023-present Allison L’Hotta, Assitant Professor, University of Colorado

 2024 Paul Calabresi Clinical Oncology K12 Scholar

 2024 Cancer League of Colorado Grant Award

Faculty Expert: NIH K Award Grant Planning (Office of Research Development and Education Seminar)

 2016, 2019, 2023

Fellow and Early Career Grant Writing Mentorship

 2016- 2023 Amanda Winters

 2017- 2019 Jenna Sopfe

 2017- present Kelly Faulk

 2017- present Jessica Lake

 2017-present Nathan Dahl

 2019-present Lindsey Murphey

 2019 Zack Graff

 2024 Allison L’Hotta

Children’s Hospital Colorado Child Health Research Internship Mentor,

2016 Brennan Requist, Summer Research Intern. Applicant for PhD programs, 2018

 2017 Caroline Soane, Summer Research Intern. Applicant for MD programs, 2018

 2018 Sharon Reddy, Summer Research Intern.

Selected as Boettcher Foundation Scholarship, 2019

2019 Mary Meister

2022 Edyth Moldow

2023 Makena Englund

2024 Samantha Thompson

**GRANT SUPPORT**

**Current Support**

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| **Cancer League of Colorado** |
| **Role** | Primary Investigator |
| **Grant #** | n/a |
| **Dates** | 1/1/25-12/31/25 |
| **% effort** | 10% |
| **Direct costs** | $30,000 |
| **Goal** | Pre-clinical Investigation to Support IIT of CDK7 Inhibition in Pediatric Embryonal CNS Tumors |

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| **NIH- National Institute of Neurologic Disorders** |
| **Role** | Primary Investigator |
| **Grant #** | 1R01NS107313-01A1 |
| **Dates** | 5/1/19-3/31-2025 |
| **% effort** | 20% |
| **Direct costs** | $1,106,960 |
| **Goal** | Optimizaiton of Autophagy Inhibition as a Clinical Target for Brain Tumors |

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| **University of Colorado Cancer Center Investigator-Initiated Trial Grant** |
| **Role** | Primary Investigator |
| **Grant #** | n/a |
| **Dates** | 7/1/19-6/30/24 |
| **% effort** | 0 |
| **Direct costs** | $20,000 |
| **Goal** | PBTC-055 (NCT04201457) is a phase I/II trial of HCQ combined with trametinib (for BRAF-fusion or NF1-associated gliomas) or trametinib and dabrafenib (for BRAFV600E gliomas) in patients < 30 years with progressive glioma. |

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| **Hyundai Hope on Wheels Scholar Hope Grant** |
| **Role** | Primary Investigator |
| **Grant #** | n/a |
| **Dates** | 1/1/24-12/31/25 |
| **% effort** | 1% |
| **Direct costs** | $400,000 |
| **Goal** | Targeting CDK7 in Atypical Teratoid Rhabdoid Tumors for Improved Survival |

**Completed Support**

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| **AACR/PLGA Fund at the Pediatric Brain Tumor Foundation** |
| **Role** | Co-Investigator |
| **Grant #** | n/a |
| **Dates** | 9/1/2020-8/31/2023 |
| **% effort** | 5% |
| **Direct costs** | $60,000 |
| **Goal** | Functional engagement and therapeutic effect of RAF-targeted therapies in glioma |

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| **Boettcher Webb-Waring Biomedical Research Award** |
| **Role** | Primary Investigator |
| **Grant #** | n/a |
| **Dates** | 7/1/18-6/30/22 |
| **% effort** | 1% |
| **Direct costs** | $235,000 |
| **Goal** | Pre-Clinical Development of Autophagy Inhibition for an Expanded Population of Central Nervous System Tumors |

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| **Alex’s Lemonade Stand** |
| **Role** | Co-Primary Investigator |
| **Grant #** | n/a |
| **Dates** | 01/01/2020-12/31/2020 |
| **% effort** | 5% |
| **Direct costs** | $200,000 |
| **Goal** | Single Cell RNA Sequencing of Pediatric High and Low-Grade Gliomas |

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| **Curing Kids Cancer Collaborative Award** |
| **Role** | Co-Primary Investigator |
| **Grant #** | n/a |
| **Dates** | 01/01/2020-12/31/2021 |
| **% effort** | 5% |
| **Direct costs** | $300,000 |
| **Goal** | Deconvoluting acquired resistance to BRAF V600E targeted therapy in primary childhood brain tumors |

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| **NIH-National Cancer Institute K08 Career Development Award** |
| **Role** | Primary Investigator |
| **Grant #** | 1K08CA193982-01A1 |
| **Dates** | 9/18/15-09/17/20 |
| **% effort** | 55% |
| **Direct costs** | $761,080 |
| **Goal** | To examine the interaction of autophagy with the BRAFV600E mutation in brain tumors. |

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| **Department of Defense Peer Reviewed Cancer Research Program Expansion Award** |
| **Role** | Primary Investigator |
| **Grant #** | CA170414 |
| **Dates** | 7/1/18-6/30/20 (relinquished 5/1/19 for scientific overlap with R01) |
| **% effort** | 7.2% |
| **Direct costs** | $344,972 |
| **Goal** | Optimization of Autophagy Inhibition as a Clinical Target for Brain Tumors |

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| **Team Connor Childhood Cancer Foundation** |
| **Role** | Primary Investigator |
| **Grant #** | N/A |
| **Dates** | 1/1/18 – 12/31/18 |
| **% effort** | 2% |
| **Direct costs** | $62,619 |
| **Goal** | Validation of proteasome inhibition as a therapeutic target in atypical teratoid/rhabdoid tumors. |

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| **St. Baldrick's Foundation Career Development Award Competitive Extension** |
| **Role** | Primary Investigator |
| **Grant #** | N/A |
| **Dates** | 7/1/15-6/30/17 |
| **% effort** | 5% |
| **Direct costs** | $230,000 |
| **Goal** | To determine clinical potential for autophagy manipulation in pediatric brain tumors. |

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| **Alex’s Lemonade Stand Foundation Young Investigator Award** |
| **Role** | Primary Investigator |
| **Grant #** | N/A |
| **Dates** | 7/1/14-6/30/16 |
| **% effort** | 5 |
| **Direct costs** | $100,000 |
| **Goal** | To examine the interaction of autophagy with the BRAFV600E mutation and the mTOR pathway in brain tumors. |

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| **Department of Defense Career Development Award** |
| **Role** | Primary Investigator |
| **Grant #** | CA130562 |
| **Dates** | 7/1/14-6/30/16 (Relinquished 9/17/15 due to overlap) |
| **% effort** | 40 |
| **Direct costs** | $240,000 |
| **Goal**  | To examine the interaction of autophagy with the BRAFV600E mutation in brain tumors. |

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| **American Cancer Society Mentored Research Scholar Grant** |
| **Role** | Primary Investigator |
| **Grant #** | MRSG TBG- 125962 |
| **Dates** | 7/1/14-6/30/19 (Relinquished due to overlap) |
| **% effort** | 40 |
| **Direct costs** | $675,000 |
| **Goal**  | To examine the interaction of autophagy with the BRAFV600E mutation in brain tumors. |

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| **St. Baldrick's Foundation Career Development Award** |
| **Role** | Primary Investigator |
| **Grant #** | N/A |
| **Dates** | 7/1/12-6/30/15 |
| **% effort** | 25% |
| **Direct costs** | $330,000 |
| **Goal** | To determine clinical potential for autophagy manipulation in pediatric brain tumors. |

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| **NIH-UCSOM K12 CHR Career Development Award** |
| **Role** | Primary Investigator |
| **Grant #** | K12 68372 |
| **Dates** | 7/1/12-6/30/14 |
| **% effort** | 50% |
| **Direct costs** | $$285,683 |
| **Goal** | To develop new targets for autophagy inhibition and determine which pediatric neural tumors are dependent on autophagy for growth. |

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| **Hyundai Hope on Wheels** |
| **Role** | Primary Investigator |
| **Grant #** | N/A |
| **Dates** | 9/1/11- 8/30/13 |
| **% effort** | 5% |
| **Direct costs** | $75,000 |
| **Goal**  | Evaluation of autophagy inhibition in primary patient derived short-term cultures and in vivo modeling of tumor response. |

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| **St. Baldrick's Foundation Fellowship Award** |
| **Role** | Primary Investigator |
| **Grant #** | N/A |
| **Dates** | 7/1/09-6/30/12 |
| **% effort** | 100% |
| **Direct costs** | $240,212 |
| **Goal**  | Determine if autophagy induction and inhibition in pediatric glioblastoma, medulloblastoma, and AT/RT cell lines determines chemosensitivity. |

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| **Cancer League of Colorado** |
| **Role** | Co-Primary Investigator |
| **Grant #** | N/A |
| **Dates** | 7/1/11-6/30/12 |
| **% effort** | 1% |
| **Direct costs** | $60,000 |
| **Goal**  | To apply functional genetic screening to define the contextual role of autophagy in pediatric neural tumors. |

**BIBLIOGRAPHY**

**Peer Reviewed**

1. KP Battaile, RL Bateman, D Mortimer, **J Mulcahy**, RK Rathbun, G Bagby, WH Fleming, and M Grompe. *In Vivo Selection of Wild-Type Hematopoietic Stem Cells in a Murine Model of Fanconi Anemia* Blood 1999 94(6): 2151-2158.
2. WH Fleming, **JM Mulcahy**, JP McKearn, PR Streeter. *Progenipoietin-1: A Multifunctional Agonist of the Granulocyte Colony-Stimulating Factor Receptor and Fetal Liver Tyrosine Kinase-3 is a Potent Mobilizer of Hematopoietic Stem Cells.* Experimental Hematology 2001, 29(8): 943-951
3. MJ Montfort, C Olivares, **JM Mulcahy**, WH Fleming. *Adult Blood Vessels Restore Host Hematopoiesis Following Lethal Irradiation*. Experimental Hematology 2002 30(8) 950-956.
4. Keating A.K., Kim, G.K., Jones, A., Donson A., Ware, K., **Mulcahy, J**., Salzberg, D.B., Foreman N., Liang, X., Thorburn, A., Graham D.K.  *Inhibition of Mer and Axl Receptor Tyrosine Kinases in Astrocytoma Cells Leads to Increased Apoptosis and Improved Chemosensitivity*. Molecular Cancer Therapeutics, 2010, 9(5): 1298-307.
5. **Levy, JM**., Thorburn, A. *Targeting Autophagy during Cancer therapy to Improve Clinical Outcomes*. Pharmacology and Therapeutics, 2011, 131(1): 130-41.
6. **Levy, JM**., Thorburn, A. *Modulation of pediatric brain tumor autophagy and chemosensitivity.* J Neurooncol, 2012, 106(2): 281-90.
7. **Mulcahy Levy, JM**., Tello, T., Giller, R., Wilkening, G., Quinones, R., Keating, A., Liu, AK. *Late Effects of Total Body Irradiation and Hematopoietic Stem Cell Transplant in Children Under Three Years of Age*. Pediatr Blood Cancer. 2012, doi: 10.1002/pbc.24252.
8. **Mulcahy Levy JM**, Hunger SP. *Brain size and neuropsychological functioning in long-term survivors of pediatric acute lymphoblastic leukemia*. Transl Pediatr 2013 Aug 15. doi: 10.3978/j.issn.2224-4336.2013.08.02
9. Kulbe JR\*, **Mulcahy Levy JM\***, Coultrap SJ, Thorburn A, Bayer KU. *Excitotoxic glutamate insults block autophagic flux in hippocampal neurons*. Brain Research 2014, 1542 (13): 12-9. \*Authors with equal contribution.
10. Donson AM, Kleinschmidt-DeMasters BK, Aisner DL, Bemis LT, Birks, DK, **Mulcahy Levy JM**, Smith AA, Handler MH, Foreman NK, Rush SZ. *Pediatric brainstem gangliogliomas show BRAFV600E in a high percentage of cases.* Brain Pathology 2014, 24 (2); 173-183.
11. Maycotte P, Gearheart, CM, Barnard, R, Aryal, S. **Mulcahy Levy, JM**, Fosmire, SP. Hansen, RJ, Morgan, MJ, Porter, CC, Gustafson, DL, Thorburn, A. *STAT3-mediated autophagy dependence identifies subtypes of breast cancer where autophagy inhibition can be efficacious*. Cancer Res 2014 May 1;74(9):2579-90. doi: 10.1158/0008-5472.CAN-13-3470
12. **Mulcahy Levy, JM**, Thompson, JC, Griesinger, AM, Amani, V, Donson, AM, Birks, DK, Morgan, MJ, Mirsky, DM, Handler, MH, Foreman, NK, Thorburn, A. A*utophagy inhibition improves chemosensitivity in BRAFV600E brain tumors.* Cancer Discov. 2014 Jul;4(7):773-80. doi: 10.1158/2159-8290.CD-14-0049
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