Rutgers Center for Lipid Research
School of Environmental and Biological Sciences
Presents the Symposium

Lipid regulation of cell stress and death

Friday, November 7, 2025
New Brunswick, NJ

Rutgers Center for Lipid Research

School of Environmental and Biological Sciences

Website: rclr.rutgers.edu

Seminar Series – Fridays at 2 p.m., IFNH 205

Lipid Regulation of Cell Stress and Death

Rutgers Center for Lipid Research Symposium
November 7, 2025

Dear Colleagues,

We are pleased to welcome you to the tenth annual symposium of the Rutgers Center for Lipid Research (RCLR) entitled *"Lipid Regulation of Cell Stress and Death"*. We have brought together scientists outside the RCLR family who will share their knowledge, results, and insights into lipids. Additionally, a trainee flash talk and poster session will highlight the research of students and postdocs. We are certain that you will find the presentations, which are designed to facilitate your interaction with other scientists, stimulating, informative, and enjoyable.

The RCLR promotes multidisciplinary research on the biochemical, biophysical, cellular, and molecular mechanisms involved in lipid metabolism, and extension of these endeavors to elucidate the underpinnings of lipid-based diseases such as obesity, lipodystrophy, diabetes, and heart disease. Our research utilizes model organisms, cells, tissues, and state-of-the-art instrumentation.

The center fosters interaction among faculty, postdoctoral associates, and students by holding monthly research meetings where postdoctoral associates and students have the opportunity to present their research and receive constructive feedback in a warm and friendly atmosphere. We hold an annual symposium and a monthly seminar series that brings renowned scientists to Rutgers. The RCLR founded the Big Ten Academic Alliance Lipid Symposium; this meeting brings lipid researchers at Big Ten schools to interact on a regular basis. In the end, we extend our research findings to address lipid-based diseases, thereby promoting optimum health.

In closing, we convey our appreciation to the School of Environmental and Biological Sciences (SEBS) for their support in bringing this symposium to fruition.

Sincerely,

George M. Carman

George M. Carman

Lipid regulation of cell stress and death

Rutgers Center for Lipid Research Symposium

November 7, 2025

Program

8:30 a.m. Registration (coffee/tea and poster set up)

8:50 a.m. Laura Lawson (Executive Dean, SEBS) and George M. Carman (Director, RCLR)

Welcome and introductions

Session I Chair: Harini Sampath (Department of Nutritional Sciences, SEBS)

9:00 a.m. Scott Dixon (Stanford University)
Palmitate-dependent non-apoptotic cell death

9:40 a.m. Yumi Imai (University of Iowa)
Traffic control of lipids to protect pancreatic islets from nutrient stress

10:20 a.m. Break

11:00 a.m. Trainee Flash talks – 3 mins each chosen from abstracts
Moderator: Christy Gliniak (Department of Nutritional Sciences, SEBS)

11:45 a.m. RCLR Annual Picture – IFNH Lobby

12 noon Lunch and posters

Session II Chair: Igor Shmarakov (Department of Animal Sciences, SEBS)

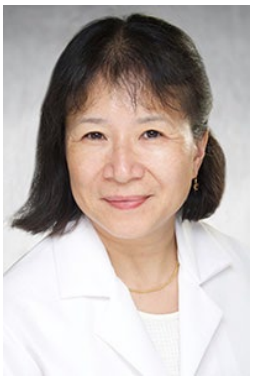
2:00 p.m. Valerian Kagan (University of Pittsburgh; Columbia University)
Redox Lipidomics of Ferroptotic Regulated Death Program for Elimination of the Unnecessary

2:40 p.m. Wenwei Hu (Rutgers Cancer Institute)
The Alteration of Hepatic Pparα and Lipid Metabolism in Cancer Cachexia

3:20 p.m. Harini Sampath and George M. Carman
Awards and Conclusion

Speaker Biographies

Dr. Scott Dixon is an Associate Professor in the Department of Biology and a member of the Cancer Institute at Stanford University. He spearheaded the discovery of ferroptosis, a non-apoptoti form of cell death, and his lab studies this and related cell death mechanisms that impinge on lipid metabolism. He earned his Ph.D. degree from the University of Toronto, followed by postdoctoral work at the University of Toronto and Columbia University. Dr. Dixon is recognized internationally for his pioneering work on lipid-regulation of non-apoptotic cell death in cancer and other diseases. During his postdoctoral training, he spearheaded the discovery of ferroptosis. His own lab has continued to characterize ferroptosis and has also discovered additional new forms of cell death, one of which, *palmoptosis*, requires the lipid palmitate. His lab has identified small molecules that can induce or inhibit palmoptosis and validated genetic regulators of this. Scott has published over 59 manuscripts in leading journals and has been supported financially over the years by the NCI, the NIGMS, and the Damon Runyon Foundation, and others. He also co-organizes the FASEB ferroptosis meeting and serves as a standing member on the CCB study section at NIH, on the editorial board of Ferroptosis and Oxidative Stress journal, and on the Scientific Advisory Boards of numerous biotech companies. His work has been recognized by numerous awards, including the Earl and Thressa Stadtman Young Scholar Award (2023) from the American Society for Biochemistry and Molecular Biology.



Dr. Yumi Imai earned her M.D. from Tohoku University, in Sendai, Japan. Following her residency and clinical practice in Japan, she completed further postdoctoral training NIDDK, UNH-Chapel Hill, and University of Pennsylvania. She started her independent career in the Department of Internal Medicine at Eastern Virginia Medical School, where she rose through the ranks to become Division Chief of Endocrinology and Metabolism. She then moved to Carver College of Medicine at the University of Iowa, Iowa City, IA in 2016 where she is currently a Fraternal Order of Eagles Professor for Diabetes Research at University of Iowa and Endocrinology Section Chief at Iowa City VA Medical Center. Dr. Imai's research program focuses on elucidating the mechanisms underlying pancreatic beta-cell dysfunction in type 2 diabetes. Her laboratory's pioneering work has uncovered a critical role for lipid droplet proteins—particularly perilipin 2 and 5—in preserving insulin secretion while protecting beta cells from lipid-induced stress. Building on these foundational insights, Dr. Imai's team is advancing our understanding of islet inflammation and islet failure using human islets, mouse models, and cellular systems to inform potential therapeutic strategies. Dr.Imai's work has been well funded including by the NIH, the American Diabetes Association, and Department of Veterans' Affairs. She has published over 70 peer-reviewed publications and book chapters. Dr. Imai serves on the Editorial Boards of the American Journal of Physiology, Endocrinology and Metabolism, which honored her as Star reviewer of the year (2016) and Frontiers in Endocrinology. She has served on several standing and ad hoc NIH study sections and has received recognitions for her scholarship and mentorship, including an Outstanding Leadership Award from the Carver College of Medicine at the University of Iowa in 2025.

Dr. Valerian Kagan is a Professor and Vice-Chairman in the Department of Environmental and Occupational Health as well as a Professor in the Department of Pharmacology and Chemical Biology, the Department of Radiation Oncology, and the Department of Chemistry at the University of Pittsburgh. He is also the Director of the Center for Free Radical and Antioxidant Health and has held numerous international adjunct or visiting professor positions. Dr. Kagan earned his PhD in Biochemistry and Biophysics at the MV Lomonosov Moscow State University and his DSc from the USSR Academy of Sciences. After many years as a Research Associate and then as Assistant Research Professor at MV Lomonosov Moscow State University, Dr. Kagan left Russia for the Institute of Physiology, Bulgarian Academy of Sciences, where he was the Head and Research Professor with the Membrane Biostabilization Group. He then moved to the University of California, Berkeley, Department of Molecular and Cell Biology, before he came to the University of Pittsburgh in 1992. Dr. Kagan is currently an investigator/co-investigator on numerous grants related to the field of redox lipidomics—a term coined for the first time by Dr. Kagan in 2004. He is the Executive Editor for *Antioxidants and Redox Signaling* and the Associate Editor of *Chemistry and Physics of Lipids*. He is a Fellow of the American Association for the Advancement of Science. He has authored >650 publications and served as invited keynote speaker, plenary speaker, or session speaker at more than 300 congresses and meetings. His published work has attracted significant attention, garnering him awards from the Society for Free Radical Research Europe and the Oxygen Club of California.

Dr. Wenwei Hu is a professor in the Department of Radiation Oncology of Rutgers Cancer Institute at Rutgers University. Dr. Hu received her PhD from Zhejiang University School of Medicine for research on mutagenesis induced by chemical carcinogen. Dr. Hu completed postdoctoral training in NYU Medical School focusing on DNA damage and repair before she moved to the University of Medicine and Dentistry of New Jersey continuing her postdoctoral training with Dr. Arnold Levine studying p53 and its signaling pathway. During this period, she discovered a novel physiological function of p53 in regulation of maternal implantation. Since 2009, Dr. Hu has been a faculty member at Rutgers Cancer Institute in New Brunswick, NJ. A major research interest of Dr. Hu's group is to study the function and regulation of tumor suppressor p53, which in turn impacts tumorigenesis. Her group discovered that chronic psychological stress impairs wild type p53 function, which contributes to the promoting effect of chronic stress on tumorigenesis. Her group's work also made important contributions toward understand the mechanisms of mutant p53 accumulation and gain of oncogenic activity in tumors. In addition, Dr. Hu studies the function of LIF, a cytokine that is a p53 target, in tumorigenesis. The research conducted in Dr. Hu's laboratory has been supported by NIH, DOD CDMRP, Ellison Medical Foundation, the American Cancer Society, the NCI network on biobehavioral pathways in cancer (NCI-NPBC), and the NJ Commission on Cancer Research (NJCCR).

The George M. and Maureen D. Carman Prize in Lipids is an endowed prize established to encourage research and to provide financial assistance to graduate students and postdoctoral fellows/associates in the School of Environmental and Biological Sciences (SEBS). The prize is awarded for outstanding research achievement in the area of lipid biochemistry. You can contribute to the endowment via the Rutgers Foundation web site and earmark the funds for the Carman Prize in Lipids.

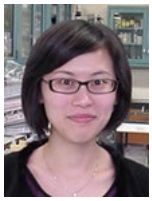
Hyeon-Son Choi
(2007)

Anibal Soto-Cardalda
(2008)

Younkyung Kim
(2009)

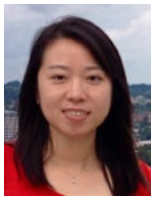
Stylianos Fakas
(2011)

Lesley Wassef
(2011)



Wen-Min Su
(2012)

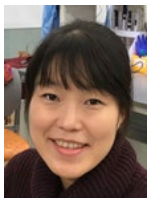
John Douglass
(2013)



Yixuan Qiu
(2014)

Marc Tuazon
(2014)

Lu-Sheng Hsieh
(2015)



Yeonhee Park
(2016)

Inna Nikonorova
(2017)

Prabuddha Dey
(2018)

Joanna Kwiatek
(2019)

KevinTveter
(2020)

Natalie Burchat
(2021)

William Jonsson
(2021)

Priyanka Sharma
(2022)

Shoily Khondker
(2022)

Ruta Jog
(2023)

Geordan Stukey
(2023)

Huyen Le
(2024)

Flash Talk List

1. **Gertrude Asante Ampadu**; *Cholesterol and PE influence PIP3 Dynamics in Model Membranes containing PC and PS*
2. **Natalie Burchat**; *The impact of intestinal stearoyl-CoA desaturases and dietary lipids on colitis-associated colorectal cancer*
3. **Joshua Chamberlain**; *Effects of bacterial sphingolipids on the properties of synthetic liposomes*
4. **Ibrahim Dar**; *Stra6 Expression in Acute Lung Injury*
5. **Camille Duchamp**; *A Role for Intestinal Stearoyl-CoA Desaturase in Modulating Acute Colonic Inflammation*
6. **MargieLenis**; *The Role of Fatty Acid Binding Protein 1 (FABP1) in Enteroendocrine Cell Function and Lipid-Mediated Metabolic Regulation*
7. **ZainabMustapha**; *Effects of Membrane Composition on Kindlin-2 Binding to Phosphatidylinositol Phosphates in Lipid Bilayers*
8. **Siddhi Pawar**; *Elucidating the role of lipid flippase in host-Cryptococcus neoformans interactions during pulmonary cryptococcosis*
9. **Andrew Privalov**; *Yck1 casein kinase I regulates lipid synthesis by phosphorylating Pah1 at Ser-475 and Ser-511*
10. **Rachael Pulica**; Phosphatidylserine Scramblases and Immune Escape in Cancer
11. **Matthew Selby**; Intestinal stearoyl-CoA desaturase-2 is highly expressed and nutritionally regulated but dispensable for energy balance
12. **Chioma Uchendu**; Spatial organization of sphingolipid synthesis enzymes
13. **Shilong Yang**; Membrane phase separation drives mechanosensitive protein dynamics
14. **Priyanka Sharma**; Modulation of intestinal stemness by delta-9 desaturases

Poster List

1. Lucinda Andrews
Lipid Droplet Dynamics in Lung Lipofibroblasts

2. Gertrude Asante Ampadu
Cholesterol and PE influence PIP3 Dynamics in Model Membranes containing PC and PS

3. Natalie Burchat
The impact of intestinal stearoyl-CoA desaturases and dietary lipids on colitis associated colorectal cancer

4. Joshua Chamberlain
Effects of bacterial sphingolipids on the properties of synthetic liposomes

5. Jui Ling Chang
Postprandial endotoxemia with a monounsaturated or saturated fatty acid enriched meals in older adults: a randomized cross-over design

6. Chuchun Liz Chang
Lipoprotein Lipase Influences Lipid and Immune Signaling Linked to Bone Marrow Hematopoietic Function

7. Ibrahim Dar
Stra6 Expression in Acute Lung Injury
8. Camille Duchamp
A Role for Intestinal Stearoyl-CoA Desaturase in Modulating Acute Colonic Inflammation

9. Nicole Ficken
Exploring the Role of Retinoids in Protecting the Lungs Against Ozone Exposure

10. Varsha Gadiyar
High-Fat Diet Induced Maternal Obesity and Pediatric Liver Disease

11. Tiancheng Hu
Cholesterol Esterification in Macrophages the Effects of Acat1-M/-M on Macrophage Activity

12. Kimberly Izarraras
Kisspeptin Mitigates Hepatic De Novo Lipogenesis in Metabolic Dysfunction-Associated Steatotic Liver Disease

13. Youn-Kyung Kim
Retinoid metabolism modulates pregnancy-induced cardiac remodeling

14. Margie Lenis
The Role of Fatty Acid Binding Protein 1 (FABP1) in Enteroendocrine Cell Function and Lipid-Mediated Metabolic Regulation

15. David LoBiondo
All-Trans-Retinoic Acid Signaling in Macrophage Differentiation and Polarization

16. Elisabetta Madonna
Regulation of postnatal heart growth: insights from in mice lacking β-carotene 9',10'-oxygenase (Bco2)

17. Rhea Mathews
S. cerevisiae programmed cell death-like effects induced by L. enzymogenes outer membrane vesicles

18. John McLaughlin
Non-specific lipid transfer proteins and plant disease resistance

19. Zainab Mustapha
Effects of Membrane Composition on Kindlin-2 Binding to Phosphatidylinositol Phosphates in Lipid Bilayers

20. Isha Padhye
Understanding retinoid status of mice lacking b-carotene 9 , 10 -oxygenase (BCO2) overtime in postnatal life

21. Ishaan Patil
Alveolar Macrophage Temporal Transcriptional Plasticity in Response to Acute Ozone Exposure

22. Siddhi Pawar
Elucidating the role of lipid flippase in host-Cryptococcus neoformans interactions during pulmonary cryptococcosis

23. Andrew Privalov
Yck1 casein kinase I regulates lipid synthesis by phosphorylating Pah1 at Ser-475 and Ser-511

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Intestinal stearoyl-CoA desaturase-2 is highly expressed and nutritionally regulated but dispensable for energy balance

26. Priyanka Sharma
Modulation of intestinal stemness by delta-9 desaturases

27. Yiling Wang
A Genuine Fluorescent Sensor for Membrane Tension

28. Chioma Uchendu
Spatial organization of sphingolipid synthesis enzymes

29. Shilong Yang
Membrane phase separation drives mechanosensitive protein dynamics

30. Emily Bostrom
Nem1 active site motifs are essential for its protein phosphatase activity on PA phosphatase Pah1

31. Nancy Lin
Genetic screen to identify inverse regulators LBPA/BMP and cholesterol as potential NPC therapeutics

32. Ryan Lee
Structurally unconventional lipids for studying stress, signaling, and adaptation

Supporters

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