

**Pharmacological and Pharmaceutical Sciences Research Retreat Agenda
August 21, 2020**

9:00 AM-10:00 AM: Welcome and Short Talk Presentations – Session 1

1.1 **Cancer** - <https://uiowa.zoom.us/j/97948064368?pwd=RkdCa3krQXhZS0JCM09tS0hSOTThRdz09>

Welcome and Moderator: Ted Abel, PhD

1. *Identifying Novel RABL6A Targets in Pancreatic Neuroendocrine Tumors Using Sleeping Beauty Screen*, **Chandra Maharjan**, PhD Candidate (DQuelle lab) – **9:10-9:20**
2. *Enhancing the Antitumor Activity of the Adenovirus Cancer Vaccine with Intratumoral Delivery of CpG-loaded Nanoparticles for the Treatment of Melanoma*, **Rasheid Smith**, PhD Candidate (Salem lab) – **9:20-9:30**
3. *The Functional Role of PRC2 Loss in Malignant Peripheral Nerve Sheath Tumor (MPNST) Metastasis*, **Qierra Brockman**, PhD Candidate and Current T32 trainee (Dodd lab) – **9:30-9:40**
4. *Targeting Gi/o-coupled GPCRs in HER2+ breast cancer*, **Cancan Lyu, PhD** (Chen lab) – **9:40-9:50**
5. *Novel Combination Therapies for MPNSTs Targeting RABL6A and RB1 Pathways*, **Jordan Kohlmeyer**, PhD Candidate and Former T32 trainee (DQuelle lab) – **9:50-10:00**

1.2 **Cellular Signaling and Disease** - <https://uiowa.zoom.us/j/91808907149?pwd=cm4ySDhsaml2TnFKdmVoa0RQTXhIZz09>

Welcome and Moderator: Stefan Strack, PhD

1. *NADPH and glutathione redox link the TCA cycle to ER homeostasis*, **Erica Gansemer**, PhD Candidate and Current T32 trainee (Rutkowski lab) – **9:10-9:20**
2. *Changes in Nucleolar Activity Induce Spatial Shifts in Protein Aggregation*, **Emily Lavering**, PhD Candidate and Current T32 trainee (Weeks lab) – **9:20-9:30**
3. *X-linked intellectual disability caused by mutations in the E3 ligase substrate adaptor KLHL15*, **Jianing Song**, PhD Candidate (Strack lab) – **9:30-9:40**
4. *Interrogating Environmental Contaminant Activity on the Human GPCR-ome*, **Joshua Wilkinson**, PhD Candidate (Roman lab) – **9:40-9:50**
5. *Norepinephrine metabolites enhance collagen cross-linking and induce a pro-fibrotic phenotype in cardiac fibroblasts via RAGE*, **Blake Monroe**, PhD Candidate and Former T32 trainee (E. Anderson lab) – **9:50-10:00**

1.3 **Pain** - <https://uiowa.zoom.us/j/91783054415?pwd=Sy9NWEdhQ1ZsTVZTdGh0d0Y0dDFxdz09>

Welcome and Moderator: Dave Roman, PhD

1. *Avoiding Opioids: Adenylyl Cyclase 1 as a Novel Target for Pain Therapeutic Discovery*, **Joseph O'Brien**, PhD Candidate (Roman lab) – **9:10-9:20**
2. *The Role of Cerebellar CGRP in Migraine-like Behavior*, **Mengya Wang**, PhD Candidate (Russo lab) – **9:20-9:30**
3. *The Role of ASICs in Immediate Exercise-Induced Muscle Pain and Exercise Performance*, **Tahsin Khataei, PhD** (Benson lab) – **9:30-9:40**
4. *Testosterone Protects Against Widespread Muscle Pain*, **Joseph Lesnak**, PhD Candidate and Current T32 trainee (Sluka lab) – **9:40-9:50**
5. *Role of C5a/C5aR1 Signaling in Central Sensitization and Neuropathic Pain*, **Alex Keyes**, PhD Candidate and Current T32 trainee (Usachev lab) – **9:50-10:00**

10:00 AM-11:00 AM: Keynote Speaker Presentation

<https://uiowa.zoom.us/j/94897000369?pwd=ZzI2V01INTFMUEYvTW9tU0U1aE5FUT09>

Facilitator: Rebecca Dodd, PhD

(Group Photo – All participants, please enable video when prompted.)



[Lydia Finley, PhD](#)

Assistant Member

Cell Biology Program

Memorial Sloan Kettering Cancer Center

Title: Metabolic Coordination of Cell Fate Decisions

11:00 AM-12:00 PM: Short Talk Presentations – Session 2

2.1 Central Control of Energy Homeostasis - <https://uiowa.zoom.us/j/92610947566?pwd=K1VZUk92aVMYWFVSTkh1SVI5Nkcrdz09>

Moderator: Dan Weeks, PhD

1. *Ascending catecholamine pathway in appetite regulation*, **Nilly Sayer, PhD** (Atasoy lab) – **11:00-11:10**
2. *The Role of RGS2PVN in Energy Homeostasis*, **Alvin Deng**, PhD Candidate (Cui lab) – **11:10-11:20**
3. *Polysynaptic Neurotracing of Autonomic Nuclei Projecting to Cardiovascular and Metabolic Organs*, **Paul Williams, PhD** (Rahmouni lab) – **11:20-11:30**
4. *FGF21 Signals to Glutamatergic Neurons in the Ventromedial Hypothalamus to Suppress Carbohydrate Intake*, **Sharon Jensen-Cody**, PhD Candidate (Potthoff lab) – **11:30-11:40**
5. *Regulation of food intake, insulin sensitivity and sympathetic nerve traffic by hypothalamic steroidogenic factor 1 neurons*, **Jingwei Jiang, MD, PhD** (Rahmouni lab) – **11:40-11:50**
6. *A novel liver-to-brain endocrine axis regulates alcohol consumption*, **Kyle Flippo, PhD** (Potthoff lab) – **11:50-12:00**

2.2 Therapy Development and Delivery - <https://uiowa.zoom.us/j/97378307300?pwd=WmZlVDVsbHoyR1Z5cGhIM0RDbTJPUT09>

Moderator: Katelin Dannen, PhD

1. *Incorporating pharmacological target-mediated drug disposition (TMDD) in a whole-body physiologically based pharmacokinetic (PBPK) model of linagliptin in rat and scale up to human*, **Nan Wu**, PhD Candidate (An lab) – **11:00-11:10**
2. *Translation of Oxfendazole from Veterinary Medicine to Human Antiparasitic Treatment*, **Thanh Bach**, PhD Candidate (An lab) – **11:10-11:20**
3. *Addressing the PEG Dilemma in Non-Viral Gene Therapy: A Case Study on Multifunctional Peptide/DNA Nanoparticles*, **Nathan Delvaux**, PhD Candidate (Rice lab) – **11:20-11:30**
4. *Thermosensitive gels used to improve microneedle-assisted drug delivery of naltrexone*, **Kevin Tobin**, PhD Candidate (Brogden lab) – **11:30-11:40**
5. *Chemical and physiological factors influencing dermal drug absorption*, **Nicole Brogden, PhD** (PSET Faculty) – **11:40-11:50**

12:00 PM-1:00 PM: Career Development Luncheon with T32 Trainee Alumni

<https://uiowa.zoom.us/j/97449285081?pwd=clptWU5tWFQ2UFV0OGRRd2ZZU1BLdz09>

Moderators: Stefan Strack, PhD and Dave Roman, PhD

Please Note: Trainees currently appointed to the Pharmacological Sciences TG are required to attend.

Participating Alumni

Kevin Tidgewell – Assistant Professor, Duquesne University

<https://www.dug.edu/academics/faculty/kevin-tidgewell>

Elizabeth Boehm – Patent Agent; Wolf, Greenfield, & Sacks

<https://www.wolfgreenfield.com/professionals/b/boehm-elizabeth>

Jacqueline Reilly – Associate Medical Director, Johnson & Johnson

<https://www.linkedin.com/in/jacqueline-reilly-aa799594/>

Laurie Davenport (Eckert) – Assistant Professor, The Christ College of Nursing and Health Sciences

<https://www.thechristcollege.edu/faculty>

Lucas BonDurant – Research Scientist, Alnylam Pharmaceuticals

<https://www.linkedin.com/in/lucas-bondurant>

Amanda Fenner, Scientist II, Bayer Crop Science, West Sacramento

<https://www.linkedin.com/in/amanda-fenner/>

Justin Drake – Assistant Professor, University of Minnesota

<https://med.umn.edu/bio/department-of-pharmacology/justin-drake>

1:00 PM-2:00 PM: Keynote Speaker Presentation

<https://uiowa.zoom.us/j/94437145567?pwd=ZjJmZHpRUHQwTDRrRStVMUNYc0ZUZU09>

Facilitator: Rebecca Dodd, PhD



[Anthony Oro, MD, PhD](#)

Eugene and Gloria Bauer Professor of Dermatology
Co-Director, Maternal and Child Health Research Institute
Associate Director, Center for Definitive and Curative Medicine
Stanford University

Title: The Nuclear Option: New Mechanisms of Tumor Evolution and Drug Resistance

2:00 PM-3:00 PM: Short Talk Presentations – Session 3

3.1 Addiction and Sleep - <https://uiowa.zoom.us/j/97754311508?pwd=SDFhamR4N2NKY0dUZXRwS0xhUGdydz09>

Moderator: Tom Rutkowski, PhD

1. *Investigating the role of basolateral amygdala cell populations in approach and avoidance behaviors*, **Sarah Ferri, PhD** (Abel lab) – **2:00-2:10**
2. *RGS6 is a critical modulator of alcohol seeking/reward behaviors and VTA neuronal activity in the mesolimbic circuit*, **Mackenzie Spicer, PhD** Candidate and Current T32 trainee (Fisher lab) – **2:10-2:20**
3. *Transcriptional regulation of RGS6 gene*, **Jianqi Yang, PhD** (Fisher lab) – **2:20-2:30**
4. *Metabolic regulation of sleep/wake states: The role of lateral hypothalamic circuit engaged by leptin*, **Uday Singh, PhD** (Cui lab) – **2:30-2:40**
5. *Quantification of sleep deficits in a mouse model of Alzheimer's disease*, **Tom James, PhD** (Marcinkiewicz lab) – **2:40-2:50**
6. *Manipulation of cAMP in Sleep Deprived Mice*, **Emily Walsh, PhD** Candidate (Abel lab) – **2:50-3:00**

Brief Closing Remarks – Ted Abel, PhD

3.2 Neurodevelopmental & Mood Disorders, Neurotoxicity -

<https://uiowa.zoom.us/j/92696829711?pwd=dGxFR0gzN1hoaURUQy96Y0lwUE9FZz09>

Moderator: Andy Russo, PhD

1. *Discovering DNA-Methylation-based Biomarkers for Bipolar Disorder Patients with Suicidal Behavior*, **Ayshah Alrfooh, PhD** Candidate (Gaine lab) – **2:00-2:10**
2. *Recurrent de novo mutations in PP2A/B'delta in the neurodevelopmental disorder Jordan's Syndrome*, **Chian Ju Jong, PhD** (Strack lab) – **2:10-2:20**
3. *Neurotoxicity of PCBs and their Metabolites*, **Neha Paranjape, PhD** Candidate (Doorn lab) – **2:20-2:30**
4. *The aldehyde metabolite of dopamine inhibits glutathione S-transferase*, **Rachel Crawford, PhD** Candidate and Former T32 trainee (Doorn lab) – **2:30-2:40**
5. *Matrix-dependent viability in neurons and glia*, **Lewis Stevens, PhD** (PSET Faculty) – **2:40-2:50**

Brief Closing Remarks – Dave Roman, PhD

Eight best oral presentation awards of \$100 each will be announced by email on Monday, August 24 after all electronic votes from judges are tallied.

Thanks

to all for your participation in the 2020 Pharmacological and Pharmaceutical Sciences Virtual Research Retreat!

List of Short Talk Presenters

(Alphabetical by Presenter Last Name)

Presenters will be allotted 10-minutes; 8-minutes for presenting, plus 2-minutes for Q&A

Presenter	Short Talk Title	Start Time of Talk	Presentation Session Subgroup
Aysheh Alrfooh	Discovering DNA-Methylation-based Biomarkers for Bipolar Disorder Patients with Suicidal Behavior	2:00	Neurodevelopmental & Mood Disorders, Neurotoxicity – Session 3.2
Thanh Bach	Translation of Oxfendazole from Veterinary Medicine to Human Antiparasitic Treatment	11:10	Therapy Development and Delivery – Session 2.2
Qierra Brockman	The Functional Role of PRC2 Loss in Malignant Peripheral Nerve Sheath Tumor (MPNST) Metastasis	9:30	Cancer - Session 1.1
Nicole Brogden, PhD	Chemical and physiological factors influencing dermal drug absorption	11:40	Therapy Development and Delivery – Session 2.2
Rachel Crawford	The aldehyde metabolite of dopamine inhibits glutathione S-transferase	2:30	Neurodevelopmental & Mood Disorders, Neurotoxicity – Session 3.2
Nathan Delvaux	Addressing the PEG Dilemma in Non-Viral Gene Therapy: A Case Study on Multifunctional Peptide/DNA Nanoparticles	11:20	Therapy Development and Delivery – Session 2.2
Alvin Deng	The Role of RGS2PVN in Energy Homeostasis	11:10	Central Control of Energy Homeostasis – Session 2.1
Sarah Ferri, PhD	Investigating the role of basolateral amygdala cell populations in approach and avoidance behaviors	2:00	Addiction and Sleep – Session 3.1
Kyle Flippo, PhD	A novel liver-to-brain endocrine axis regulates alcohol consumption	11:50	Central Control of Energy Homeostasis – Session 2.1
Erica Gansemer	NADPH and glutathione redox link the TCA cycle to ER homeostasis	9:10	Cellular Signaling and Disease – Session 1.2
Tom James, PhD	Quantification of sleep deficits in a mouse model of Alzheimer's disease	2:40	Addiction and Sleep – Session 3.1
Sharon Jensen-Cody	FGF21 Signals to Glutamatergic Neurons in the Ventromedial Hypothalamus to Suppress Carbohydrate Intake	11:30	Central Control of Energy Homeostasis – Session 2.1
Jingwei Jiang, MD, PhD	Regulation of food intake, insulin sensitivity and sympathetic nerve traffic by hypothalamic steroidogenic factor 1 neurons	11:40	Central Control of Energy Homeostasis – Session 2.1
Chian Ju Jong, PhD	Recurrent de novo mutations in PP2A/B'delta in the neurodevelopmental disorder Jordan's Syndrome	2:10	Neurodevelopmental & Mood Disorders, Neurotoxicity – Session 3.2
Alex Keyes	Role of C5a/C5aR1 Signaling in Central Sensitization and Neuropathic Pain	9:50	Pain – Session 1.3
Tahsin Khataei, PhD	The Role of ASICs in Immediate Exercise-Induced Muscle Pain and Exercise Performance	9:30	Pain – Session 1.3
Jordan Kohlmeyer	Novel Combination Therapies for MPNSTs Targeting RABL6A and RB1 Pathways	9:50	Cancer - Session 1.1
Emily Laverig	Changes in Nucleolar Activity Induce Spatial Shifts in Protein Aggregation	9:20	Cellular Signaling and Disease – Session 1.2

Presenter	Short Talk Title	Start Time of Talk	Presentation Session Subgroup
Joseph Lesnak	Testosterone Protects Against Widespread Muscle Pain	9:40	Pain – Session 1.3
Cancan Lyu, PhD	Targeting Gi/o-coupled GPCRs in HER2+ breast cancer	9:40	Cancer - Session 1.1
Chandra Maharjan	Identifying Novel RABL6A Targets in Pancreatic Neuroendocrine Tumors Using Sleeping Beauty Screen	9:10	Cancer - Session 1.1
Blake Monroe	Norepinephrine metabolites enhance collagen cross-linking and induce a pro-fibrotic phenotype in cardiac fibroblasts via RAGE	9:50	Cellular Signaling and Disease – Session 1.2
Joseph O'Brien	Avoiding Opioids: Adenylyl Cyclase 1 as a Novel Target for Pain Therapeutic Discovery	9:10	Pain – Session 1.3
Neha Paranjape	Neurotoxicity of PCBs and their Metabolites	2:20	Neurodevelopmental & Mood Disorders, Neurotoxicity – Session 3.2
Nilly Sayar, PhD	Ascending catecholamine pathway in appetite regulation	11:00	Central Control of Energy Homeostasis – Session 2.1
Uday Singh, PhD	Metabolic regulation of sleep/wake states: The role of lateral hypothalamic circuit engaged by leptin	2:30	Addiction and Sleep – Session 3.1
Rasheid Smith	Enhancing the Antitumor Activity of the Adenovirus Cancer Vaccine with Intratumoral Delivery of CpG-loaded Nanoparticles for the Treatment of Melanoma	9:20	Cancer - Session 1.1
Jianing Song	X-linked intellectual disability caused by mutations in the E3 ligase substrate adaptor KLHL15	9:30	Cellular Signaling and Disease – Session 1.2
Mackenzie Spicer	RGS6 is a critical modulator of alcohol seeking/reward behaviors and VTA neuronal activity in the mesolimbic circuit	2:10	Addiction and Sleep – Session 3.1
Lewis Stevens, PhD	Matrix-dependent viability in neurons and glia	2:40	Neurodevelopmental & Mood Disorders, Neurotoxicity – Session 3.2
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