

Pacific Coast Protease Workshop

Palm Canyon Resort Borrego Springs, California



April 23 – 25, 2023

Organized by Matt Bogyo, Olivier Julien, Anthony
O'Donoghue, Antoine Dufour and Scott Snipas

ABOUT THE WORKSHOP

This workshop is designed to provide a stimulating expert environment for the discussion of new information on proteolytic enzymes, their substrates, their inhibitors, and their function.

The objective is to provide trainees (junior faculty, post-docs, and graduate students) with experience in presenting their work to an expert audience, chairing scientific sessions, and to foster collaborations. Expert external faculty will give guest presentations and stimulate discussions.

The work presented here is state-of-the-art and much is yet to be published. Consequently, professional use of the data and ideas learned at the workshop is prohibited without the expressed consent of the respective presenters and their supervisors.



**There will be awards at the end of the workshop,
including the coveted "Half Moon" for the best
presentation.**

SPONSORS

Pacific Coast Protease Spring School is pleased to recognize support by:



The Microplate Reader Company

PRESENTATIONS AND ABSTRACTS

Trainee talks are 15 min (12 min + 3 min discussion).

Guest faculty talks are 30 min (25 min + 5 min discussion).

Speaker abstracts are listed in order of presentation.

The Julien's Lab



Sunday, April 23rd

3:00 pm	Matt, Anthony, OJ and Tony	Welcome!	Location: Upstairs Conference Room
---------	-------------------------------	----------	------------------------------------

Chairs: Henry Wang and Franco Faucher

Time	Speaker	Title	Lab
3:20 pm	Mathew Child	Fantastic beasts and how to kill them: <i>Turning proteomic insights into molecular mechanisms</i>	Outside Expert
3:50 pm	Nikki Pedowitz	<i>A peptide conjugated biosensor for direct detection of active proteases in Borrelia spirochetes</i>	Bogyo
4:05 pm	Fernanda Dos Reis Rocho	<i>Examining the specificity of different SARS-CoV-2 M^{pro} variants</i>	Salvesen
4:20 pm	Ana D'aubeterre	<i>Proteolysis in the reproductive tract of women with high-risk pregnancies: exploring the dysregulatory potential of the microbiome</i>	Dufour/ Sycuro
4:35 pm	Diego Trujillo	<i>Proteasome Inhibitors as a Novel Drug-class for Treatment of Giardiasis</i>	O'Donoghue
4:50 pm		15 min Discussion	
5:05 pm	Coffee break	Location: Conference Room	



Chairs: Reinhild Kappelhoff and Regan Penner

Time	Speaker	Title	Lab
5:35 pm	Vinit Mahajan	<i>Proteases in eye diseases</i>	Outside Expert
6:05 pm	Peter Bell	<i>No substrate left behind – data mining for evidence of proteolysis</i>	Overall
6:20 pm	Leyna Duong	<i>Expression and purification of enterovirus 2A split proteases</i>	Bogyo
6:35 pm	Pavla Fajtova	<i>Recombinant Expression and Structural Analysis of the 20S Proteasome from Trichomonas vaginalis</i>	O'Donoghue
6:50 pm		<i>15 min Discussion</i>	
7:20 pm	Dinner	Pizza at Carlee's 660 Palm Canyon Dr, Borrego Springs, CA 92004, US	

The Bogyo's Lab





Monday, April 24th

Chairs: Ana D'aubeterre and Nikki Pedowitz

Time	Speaker	Title	Lab
8:30 am	Breakfast	Location: Big Horn Bar and Grill	
9:00 am	Paulina Kasperkiewicz	<i>Measuring the proteases activity in a myeloid lineage cell</i>	Outside Expert
9:30 am	Sonali Bhardwaj	<i>Proteomic and metabolomic analysis of first trimester maternal serum associated with preterm birth</i>	Dufour
9:45 am	Brianna Huryz	<i>Development of subunit specific Trichomonas vaginalis 20S proteasome substrates for drug design</i>	O'Donoghue

10:00 am	Tulsi Upadhyay	<i>Identification of novel covalent inhibitors and activity-based probes for serine hydrolases in S. aureus</i>	Bogyo
10:15 am		<i>15 min Discussion</i>	
10:30 am	Coffee break	Location: Conference Room	



Chairs: Pavla Fajtova and George Butler

Time	Speaker	Title	Lab
11:00 am	Kolden Van Barr	<i>Hunting for inflammatory caspase substrates</i>	Julien
11:15 pm	Hugo Ramos de Jesus	<i>Substrate sequence specificity determination of the SARS-CoV-2 3CL protease by PICS</i>	Overall
11:30 am	Jeyun Jo	<i>Development of Oxadiazolone-based Probes Targeting the Self-reciprocal Serine Hydrolase FphE in S. aureus</i>	Bogyo
12:00 pm	lunch	Location: Conference Room	
1:00 pm	Julian, CA	Gold Mine tour and Brewery dinner	
7:00 pm	Dinner	Location: Brewery dinner	

The Dufour lab stuck... as always!



Tuesday, April 25th

Chairs: Maly Cosco and Kolden Van Barr

Time	Speaker	Title	Lab
8:30 am	Breakfast	Location: Big Horn Bar and Grill	
9:00 am	Gigi Knudsen	<i>Application of Protease Profiling Technology to Biological Discovery for Diagnostics</i>	Outside Expert
9:30 am	John Bennett	Application of Mixed Alkyl/Aryl Phosphonates to Identify Essential Serine Hydrolases in <i>Plasmodium falciparum</i>	Bogyo
9:45 am	Regan Penner	<i>Comparing the colonic tissue proteome of ulcerative colitis patients with active and inactive disease</i>	Dufour
10:00 am	Kristyna Blazkova	<i>Identification of Microbial Proteases that Modulate the Activity of the Protease-Activated Receptor 2</i>	Bogyo
10:15 am		15 min Discussion	
10:30 am	Coffee break	Location: Conference Room	



Chairs: Maly Cosco and Kolden Van Barr

Time	Speaker	Title	Lab
11:00 am	Shiyu Chen	<i>A substrate-based AND-gate probe for selective and sensitive NASH imaging</i>	Bogyo
11:15 am	Vandna Sharma	<i>Isolation and biochemical analysis of 20S proteasome as a potential drug target for treatment of Candidiasis</i>	O'Donoghue
11:30 pm	Nick Young	<i>In silico and biochemical screening of TMPRSS2 inhibitors as an antiviral strategy against SARS-CoV-2</i>	Craik
11:45 pm		<i>15 min Discussion</i>	
12:00 pm	Lunch	Location: Big Horn Bar and Grill	



Chairs: Peter Bell and Satarupa Bhaduri

Time	Speaker	Title	Lab
1:00 pm	Christian Cunningham	TBD	Outside Expert
1:30 pm	Henry Wang	<i>Exploring Caspase Family Substrates Using N-terminomics and Database Assembly</i>	Julien
1:45 pm	Tyler Detomasi	<i>Proteases influence colony aggregation behavior in <i>Vibrio cholerae</i></i>	Craik
2:00 pm	Franco Faucher	<i>Protease activated probes for real-time ratiometric imaging of solid tumors</i>	Bogyo

2:00 pm	Satarupa Bhaduri	Proteolytic characterization of an intramembrane rhomboid protease Rhbd14	O'Donoghue/Neal
2:00 pm	Maly Cosco	Development of Selective Covalent Inhibitors for Fibroblast Activation Protein (FAP)	Bogyo
2:45 pm	Garima Arvikar	Developing a targeted radiotherapy platform with a proteolytically activated membrane binding radiopharmaceutical	Craik/Evans
3:00 pm		15 min Discussion	
7:30 pm	Dinner and Awards	Location: Big Horn Bar and Grill	



Wednesday, April 26th

9:00 am	Departure
---------	-----------

Emails

mbogyo@stanford.edu
tulsiu@stanford.edu
jeyunjo@stanford.edu
jmbennet@stanford.edu
pedowitz@stanford.edu
faucher@stanford.edu
blazkova@stanford.edu
cosco@stanford.edu
sc5900@stanford.edu
leyna@stanford.edu
gsalvesen@sbpdiscovery.org
fdosreisrocho@sbpdiscovery.org
ssnipas@sbpdiscovery.org
ajodonoghue@health.ucsd.edu
pfajtova@health.ucsd.edu
v3sharma@health.ucsd.edu
bhurysz@health.ucsd.edu
dtrujill@health.ucsd.edu
sbhaduri@UCSD.EDU
Garima.Arvikar@ucsf.edu
Nicholas.Young2@ucsf.edu
tylerdetomasi@gmail.com
antoine.dufour@ucalgary.ca
sonali.bhardwaj@ucalgary.ca
regan.penner@ucalgary.ca
ana.daubeterre@ucalgary.ca
ojulien@ualberta.ca
henry6@ualberta.ca
vanbaar@ualberta.ca
reini.k@ubc.ca
george.butler@ubc.ca
peter.bell@ubc.ca
hugo@dentistry.ubc.ca
marcin.drag@pwr.edu.pl
marcin.poreba@pwr.edu.pl