



SUNDAY JULY 23

1:00pm-5:00pm	Registration Desk Open- Langford Hall
6:00pm-8:00pm	Dinner- Miller Dining Hall

MONDAY JULY 24

7:00am	Breakfast Opens- Miller Dining Hall
8:15am-6:00pm	Thermal Biology Institute Field Trip and Workshop, Yellowstone National Park
6:20pm-8:00pm	Dinner- Miller Dining Hall

TUESDAY JULY 25

7:00am	Breakfast Opens- Miller Dining Hall
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All Presentations in 101 Gaines Hall

Analysis and engineering of metabolic solution space

8:50am-9:00am		Opening Remarks
9:00am-9:40am	T-1	Exploring the combinatorial space of complete pathways to chemicals- Costas Maranas
9:40am-10:05am	T-2	Design of multi-biosynthetic paths- Elmar Heinzle
10:05am-10:30am	T-3	MODCELL: A multiobjective strain design platform for modular cell engineering- Cong Trinh
10:30am-11:00am		Break
11am-11:40am	T-4	Managing uncertainty in metabolic network structure- Jason Papin
11:40am-12:05pm	T-5	Mentos: a thermodynamics approach for estimating metabolites and fluxes- Jeremy Zucker
12:05pm-12:30pm	T-6	Computing EFM's consistent with equilibrium constants- Sabine Peres
12:30pm-1:35pm		Lunch- Miller Dining Hall

Resource allocation and metabolism

1:35pm-2:15pm	T-7	Systems analysis of intracellular pH vulnerabilities for cancer therapy- Eytan Ruppim
2:15pm-2:40pm	T-8	The hidden costs of enzymatic catalysis- Elad Noor
2:40pm-3:10pm		Break
3:10pm-3:35pm	T-9	Evolution explains the universality and simplicity of microbial metabolism- Daan de Groot
3:35pm-4:00pm	T-10	Multi-constraint approach for the design of lean-proteome strains- Egils Stalidzans
4:00pm-4:25pm	T-11	Enzymes and substrates are balanced at minimal combined mass concentration-

TUESDAY JULY 25, continued

	Martin Lercher
4:25pm-4:40pm	Break
4:40pm-5:10pm	Panel 1
5:10pm-5:20pm	Rapid Fire Poster Presenters
5:20pm-6:20pm	Posters 1
6:20pm-8:00pm	Dinner- Miller Dining Hall

WEDNESDAY JULY 26

7:00am	Breakfast Opens- Miller Dining Hall
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All Presentations in 101 Gaines Hall

Resource allocation and metabolism

8:40am-8:45am		Opening Remarks
8:45am-9:25am	T-12	Spatiotemporal dynamic of gut microbiota from <i>in vitro</i> and <i>in silico</i> models- Terry Hwa
9:25am-9:50am	T-13	How a few tolerant individuals can save a population under stress- Christopher Marx
9:50am-10:15am	T-14	Connecting flux balance at the environmental and organismal levels- Isaac Klapper
10:15am-10:45am		Break
10:45am-11:25am	T-15	Exploring the metabolic potential of human gut microbiota- Ines Thiele
11:25am-11:50am	T-16	<i>In silico</i> and <i>in vitro</i> analysis of resource allocation in biofilm consortia- Ross Carlson
11:50am-12:00pm		Activities Discussion
12:00pm-6:00pm		Lunch and Activities
6:00pm-9:00pm		Banquet- Baxter Hotel Ball Room, Downtown Bozeman

THURSDAY JULY 27

7:00am	Breakfast Opens- Miller Dining Hall
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All Presentations in 101 Gaines Hall

Fundamentals of metabolic structure

8:55am-9:00am		Opening Remarks
9:00am-9:40am	T-17	Elementary flux vectors: Closing the gap between elementary flux modes and flux balance analysis- Steffen Klamt
9:40am-10:05am	T-18	Extremum principles in metabolic networks- John Barrett
10:05am-10:30am	T-19	Identifying optimal metabolic nodes using minimal cut sets- Naveen Venayak
10:30am-11:00am		Break

Applied metabolic systems analysis

11:00am-11:40am	T-20	Model-guided engineering of microbial biocatalysts- Jennifer Reed
11:40am-12:05pm	T-21	Optimizing the production of bulk chemical from carbon monoxide using a genome scale model of <i>Clostridium autoethanogenum</i> - Rupert Norman
12:05pm-12:30pm	T-22	Metabolic modeling in food biotechnology- Ahmad Zeidan
12:30pm-1:40pm		Lunch- Miller Dining Hall

THURSDAY JULY 27, continued

Intersection of photosynthesis and central metabolism

1:40pm-2:05pm	T-23	Explaining the asymmetric label incorporation during photosynthesis- Oliver Ebenhoeh
2:05pm-2:30pm	T-24	Elementary modes analysis of photorespiration- David Fell
2:30pm-2:55pm	T-25	Flux analysis of the plant MEP pathway- Johann Rohwer
2:55pm-3:25pm		Break

Dynamic flux analysis

3:25pm-3:50pm	T-26	Dynamic modeling and flux analysis- Mario Jolicoeur
3:50pm-4:15pm	T-27	Towards modeling dynamic regulation in ecosystems- Antonella Succurro
4:15pm-4:30pm		Break
4:30pm-5:00pm		Panel 2
5:00pm-5:15pm		Rapid Fire Poster Presenters
5:15pm-6:20pm		Posters 2
6:20pm-8:00pm		Dinner- Miller Dining Hall

FRIDAY JULY 28

7:00am Breakfast Opens- Miller Dining Hall

All Presentations in 101 Gaines Hall

Ecology, metabolism and resource storage

8:55am-9:00am		Opening remarks
9:00am-9:40am	T-28	Progressing towards a deep integration of chemistry and biology to discover new protein functions, pathways, and ecological principles- Chris Henry
9:40am-10:00am	T-29	Growth or storage? Exploring metabolic decisionmaking under feast famine conditions using dynamic ¹³ C flux analysis- Leonor Guedes da Silva
10:00am-10:30am	T-30	Modeling cyanobacterial growth- Ralf Steuer
10:30am-11:00am		Break
11:00am-11:25am	T-31	Dynamic metabolic flux analysis of oil biosynthesis in <i>Camelina sativa</i> seeds- Teresa Clark
11:25am-11:50am	T-32	Modeling the phosphorus pools of <i>Chlorella vulgaris</i> - Dipali Singh

Methods: Advances, theory and demonstrations

11:50am-12:30pm	M-1	The COBRA Toolbox 3.0 and beyond- Ronan Fleming
12:30pm-1:40pm		Lunch- Miller Dining Hall
1:40pm-2:20pm	M-2	Improving automated model reconstruction- Jose Faria
2:20pm-3:00pm	M-3	Unification of genome scale models- Filipe Liu
3:00pm-3:15pm		Break
3:15pm-3:55pm	M-4	Memote- A testing suite for constraints-based metabolic models- Christian Lieven
3:55pm-4:35pm	M-5	MFAPipe: Open source software for parallel labeling, steady state metabolic flux analysis- Mark Borkum