Agenda CRISPR 2017

June 8-10, with optional Yellowstone tour June 11

**The conference will provide breakfast, lunch and coffee breaks on June 8, 9 and 10. Dinner will be provided on June 8 and June 10. Attendees are their own for dinner June 9. For those going on the Yellowstone tour; you are on your own for breakfast and dinner June 11; lunch is provided on the Yellowstone tour.*

Talks are between 20-30 minutes, please check the length of your talk. Talks should allow time for about 5 minutes of question and answer time at the end of the presentation.

Wednesday, June 7

16:00-20:00 **Registration** Fireside Lounge in the Huntley Lodge
(19:00 Invited Speaker Dinner **Invitation only event)*

Thursday, June 8

08:00-09:00 Breakfast /Huntley Dining Room
08:30-09:30 Registration outside of the conference room

09:15-09:30 Welcome notes
Keynote
09:30-10:30 Peter Fineran, University of Otago CRISPR-Cas: adapting to change
10:30-10:50 **Sukrit Silas**, Stanford University, *Shared utilization of spacers by evolutionarily divergent CRISPR-Cas systems in Marinomonas mediterranea MMB-1*

10:50-11:30 Coffee Break

Adaptation Session Chair Stan Brouns
11:30-12:00 **Michael Terns,** University of Georgia, *Spacer Acquisition in Pyrococcus furiosus*
12:00-12:20 **Addison Wright,** University of California, Berkeley,*Target recognition by Cas1-Cas2*

12:20-14:00 Lunch / Huntley Dining Room

Adaptation Session Chair Erik Sontheimer
14:00-14:30 **Malcolm White,** University of St. Andrews, *Adding Dangerous DNA to the Watchlist*
14:30-14:50 **Joshua Modell,** *The Rockefeller University, CRISPR-Cas systems exploit viral DNA injection to establish and maintain adaptive immunity*
14:50-15:10 **Georg Mohr,** University of Texas at Austin, *A reverse transcriptase-Cas1 fusion protein in Marinomonas mediterranea also functions in CRISPR precursor RNA processing*

15:10-15:30 Coffee Break

anti-CRISPR Session Chair John van der Oost
15:30-16:00 **Alan Davidson,** University of Toronto, *The Mechanisms and Evolution of anti-CRISPR Systems*
16:00-16:30 **Erik Sontheimer,** University of Massachusetts, *Type II-C CRISPR-Cas Systems and their Natural Inhibitors*
16:30-16:50 **Joe Bondy-Denomy**, University of California, San Francisco, *Inhibition of CRISPR-Cas9 with Phage Proteins*
16:50-17:20 **Edze Westra**, University of Exeter, *Evolutionary ecology of CRISPR-Cas*

17:20-17:35 **12 x 1 Minute Poster Talks** ***Presenters listed below***

17:35-18:35 **Poster Session / Even Numbers**

18:30 ***Welcome Dinner***

****12 x 1 Minute Poster Talk Presenters*** Session Chair Chase Beisel *(Corresponding poster number indicated)*
2. Simon Jackson, University of Otago, *Imprecision during spacer acquisition by type I CRISPR-Cas systems increases CRISPR diversity in* bacterial populations
4. Jenny Broniewski, University of Exeter, *Inhibition of Quorum Sensing increases phage resistance levels*
6. Stineke van Houte, University of Exeter, *CRISPR-Cas provides partial immunity against phages that express anti-CRISPR genes*
8. Marios Mejdani, University of Toronto, *Characterization of an anti-CRISPR that can convert a type I-E CRISPR-Cas complex into a transcriptional activator*
10. Adair Borges, University of California, San Francisco, *Anti-CRISPRs provide a Trojan Horse mechanism to CRISPR autoimmunity*
12. Lauren Cooper, Wadsworth Center, New York State Department of Health, & University at Albany, *Determining Sequence Requirements for E. coli Type I-E CRISPR-Cas Function*
14. Vladimir Mekler, Rutgers University, *Mechanism of duplex DNA destabilization by RNA-guided Cas9 nuclease during target interrogation*
16. Joseph Wade, University at Albany, SUNY, *Sequence Requirements for Cascade binding, Interference and Priming in the Escherichia coli Type I-E CRISPR-Cas system*
18. Daan Swarts, University of Zurich, *Structural basis for guide RNA processing and seed-dependent DNA targeting and cleavage by CRISPR/Cas12a*
20. Juliane Behler, Albert-Ludwigs-University Freiburg, *A major host-encoded nuclease as the maturation enzyme of a CRISPR-Cas subtype III-B system in the cyanobacterium Synechocystis sp. PCC 6803*
22. Andrew Varble, The Rockefeller University, *Horizontal gene transfer drives CRISPR dissemination during phage infection*
24. Misha Klein, Delft University of Technology, *Understanding the determinants of target recognition*

Friday, June 9

07:30-8:30 Breakfast /Huntley Dining Room

Type III Session Chair Michael Terns
08:30-09:00 **Scott Bailey,** Johns Hopkins University, RNA-activated DNA cleavage by the Type III-B CRISPR–Cas effector complex
09:00-09:30 **Virginijus Siksnys,** Vilnius University, **EMBO KEYNOTE LECTURE** *Mechanisms of Type III CRISPR-Cas immunity*
09:30-10:00 **Martin Jinek**, University of Zurich, *Mechanistic insights into type III-A and type V-A systems*

10:00-10:30 Coffee Break

Type I Session Chair Edze Westra
10:30-11:00 **Dipali Sashital,** Iowa State University, *Interference-independent priming in the E. coli Type I-E CRISPR-Cas system*
11:00-11:30 **Konstantin Severinov**, Rutgers University, *CRISPR adaptation using oligo transformation assay*
11:30-11:50 **Lennart Randau**, Max Planck Institute & Philipps-University-Marburg, *Structural basis of CRISPR RNA-guided DNA recognition by a minimal Type I-Fv Cascade surveillance complex*

12:00-14:00 Lunch / Scenic lift ride and group photo at the top of the Ram Charger lift

Type I Session Chair Peter Fineran
14:00-14:30 **Ailong Ke**, Cornell University, *CRISPR interference in Type I-E systems*
14:30-15:00 **Ilya Finkelstein**, University of Texas, *Single molecule imaging reveals distinct roles for the Cascade complex in CRISPR interference and primed acquisition*
15:00-15:20 **Chirlmin Joo**, Delft University, Repetitive DNA reeling by the Cas3 helicase for CRISPR memory formation

15:20-16:00 Coffee Break

Class 2 Session Chair Sam Sternberg
16:00-16:30 **Osamu Nureki**, The University of Tokyo, *Molecular mechanism of CRISPR and structure-based development of genome editing tool towards medical applications*
16:30-16:50 **Chase Beisel**, North Carolina State University, *Functional characterization of Cas9 from the food-borne pathogen* C. jejuni
16:50-17:10 **Aaron Smargon**, MIT, *Cas13b and the Differentially Regulated RNA-targeting Type VI-B CRISPR System*

17:10-17:25 **12 x 1 Minute Poster Talks *Presenters listed below**

17:30-18:30 **Poster Session / Odd Numbers**

18:30 ***Dinner on your own***

****11 x 1 Minute Poster Talk Presenters*** Sesion Chiar Blake Wiedenheft *(Corresponding poster number indicated)*
1. Chaoyou Xue, Iowa State University, *Real-time observation of target searching by the CRISPR surveillance complex Cascade*
3. Ines Fonfara, Max Planck Institute & The Laboratory for Molecular Infection Medicine Sweden, *Engineering of temperature- and light-switchable Cas9 variants*
5. MaryClare Rollins, Montana State Univerity, First structure of a Cas1-2/3 complex
7. Barrett Steinberg, Editas Medicine, *Directed Evolution of Targeted Cas9 to Specific Cleavage Sites*
9. Wen Ying Wu, Wageningen University, *CRISPR immunity during cell dormancy*
11. Viktorija Globyte, Delft University of Technology, *Cas9 target search is facilitated by one-dimensional diffusion along the DNA strand*
13. Robert Fagerlund, University of Otago, *Spacer capture and integration by a type I-F Cas1:Cas2-3 CRISPR adaptation complex*
15. Hiroshi Nishimasu, The University of Tokyo, *Real-space and real-time dynamics of CRISPR-Cas9 visualized by high-speed atomic force microscopy*
17. Ralf Seidel, Universität Leipzig, *Quantitative descriptor for the R-loop dynamics by Cascade*
19. Ekaterina Semenova, Rutgers University, *Spacer acquisition process in RNA-targeting subtype VI-A CRISPR-Cas system*
21. Ole Niewoehner, University of Zurich, *Allosteric control of Csm6 activity in type III-A systems*

Saturday, June 10

08:00-09:00 Breakfast /Huntley Dining Room

Class 2 Session Chair Ailong Ke
09:00-09:30 **Jennifer Doudna**, UC Berkeley, *Conformational checkpoints control accuracy of DNA binding and cleavage by CRISPR-Cas9*
09:30-10:00 **Linyi Gao**, Broad Institute of MIT and Harvard, *Enhancing the CRISPR-Cas genome editing toolbox though structure-guided engineering*
10:00-10:20 **Yanli Wang**, Chinese Academy of Sciences, *C2c2 Structures Provide Insights into Mechanism of Its Two Independent RNase Activities*

10:20-11:00 Coffee Break

Applications Session Chair Rodolphe Barrangou
11:00-11:20 **Sylvain Moineau**, Université Laval, *Genome engineering of virulent phages*
11:20-11:40 **Peter Cameron**, Caribou Biosciences, *Mapping the Genomic Landscape of CRISPR-Cas9 Cleavage*
11:40-12:00 **Hari Jayaram**, Editas Medicine, *Characterizing the components of a CRISPR-Cas9 genomic medicine*
12:00-12:20 **Gregory Davis**, MilliporeSigma, *Improvement of CRISPR Activity and Specificity via Proximal Binding of Orthogonal CRISPR/Cas Systems (proxy-CRISPR)*

12:20-14:00 Lunch / Huntley Dining Room

Outcomes of Cleavage Session Chair Alan Davidson
14:00-14:30 **John van der Oost**, University of Wageningen, *Guide-free Cas9 as a DNA targeting virulence factor*
14:30-15:00 **Rodolphe Barrangou**, North Carolina State University, *Outcomes and applications of CRISPR self-targeting*
15:00-15:30 **Stan Brouns**, University of Delft, *Effects of Bacteriophage DNA glucosylation on CRISPR-Cas interference*

15:30-16:00 Coffee Break

CRISPRs Evolution and Beyond Session Chair Virginijus Siksnys
16:00-16:30 **Eugene Koonin**, National Institutes of Health, *Mobile genetic elements and evolution of CRISPR-Cas systems: all the way there and back*
16:30-17:00 **Rotem Sorek**, Weizmann Institute, *Beyond CRISPR – phage defense systems in the wild*
17:00-17:30 **Mark Young & Eric Boyd**, Montana State University, *Yellowstone National Park*
17:30-17:45 **Concluding remarks**

18:00 ***Closing Dinner***

Sunday, June 11

08:00-18:00 **Optional Yellowstone National Park Tour *By reservation only***
Depart from the Huntley Lodge, boxed lunch provided.
The tour is lead by **Eric Boyd and Mark Young, both of Montana State University.**
*The tour plans to be back to the Huntley Lodge by 18:00 (6pm), but maybe later depending on traffic and road conditions.