Workshop Program by Day

Time (PDT)	Monday, August 02, 2021
5:30 AM	Coffee Klatsch
6:00 AM	Henry Wolkowicz: **NP-Hard Problems, Doubly Nonnegative Relaxations, Facial Reduction, and Splitting Methods**
7:00 am	Russel Luke: **Feasibility models: from nanoscale photonic imaging to randomized Algorithms for machine learning**
	Howard Heaton, Aviv Gibali: **Data-Driven Feasibility Algorithms**
8:00 am	Walaa Moursi: **The Douglas-Rachford algorithm for solving possibly inconsistent optimization problems**
	Coffee Break/Breakout Groups
9:00 am	Matthieu Hentz: **Proton CT Reconstruction with Directional TV Using X-ray Priors**
	Pierluigi Piersimoni: **Latest developments of the Bergen pCT project**
10:00 am	Lennart Volz: **Investigating different energy detector designs for single-event helium ion imaging**
	Esther Bär: **Assessment of the impact of CT calibration procedures for proton therapy planning on paediatric treatments**
11:00 am	Carla Winterhalter: **Monte Carlo simulations for clinical and research applications in proton therapy at PSI**
	Keegan McNamara: **GPU accelerated Monte Carlo activation calculations for range verification**
12:00 pm	*Short graduate student research presentation*
	Lunch/Dinner Break/Breakout Groups

1:00 PM	Ryan Fullarton: **'A likelihood-based particle imaging filter using prior information**
	Arthur Lalonde: **Anatomical and setup changes in head and neck intensity-modulated proton therapy: comparison between robust optimization and online adaptation**
2:00 pm	Eli Brottman: **A Comparison of String Averaging and Component Averaged Row Projection Algorithms Used in Image Reconstruction**
	Blake Schultze: **Practical Implementation of pCT Algorithms**
3:00 PM - 4:00 PM	Breakout Groups Star Party

Time (PDT)	Tuesday, August 03, 2021
5:30 AM	Coffee Klatsch
6:00 AM	Reng Ashokan: **New Medical Devices: FDA Regulations and Best Practices – An Overview**
7:00 am	Felix Ulrich-Pur: **Development of an ion CT system based on 4D-tracking and time-of-flight based residual energy determination**
	George Dedes: **Update on fluence modulated proton CT activities and a new pCT artifact reduction method**
8:00 am	Chiara Gianoli: **Hybrid imaging framework for adaptive ion beam therapy**
	Katrin Schnürle: **Small Animal CMOS Integration Mode Proton Imaging at different Treatment Facilities**
9:00 am	Coffee Break/Breakout Groups
	Max Aehle,Viktor Leonhardt: **Quantification and Visualization of Uncertainties in CT Reconstruction**
10:00 am	Daniel Robertson: **Proton radiography with a monolithic plastic scintillator and digital camera**
	Abdelkhalek Hammi: **Imaging–based cerebrovasculature and a patient-specific circulatory system to model radiation dose to peripheral blood**
11:00 am	Prasanna Palaniappan: **'2D-3D image registration framework of treatment planning X-ray CT based on proton radiographies**
	Tim Gehrke: **Achievable image quality of helium-beam radiography of high-WET objects with a system based on thin silicon pixel detectors**
12:00 pm	*Short graduate student research presentation*
	Lunch/Dinner Break/Breakout Groups

1:00 PM	Jordan Houri: **pCT reconstruction based on scatter rejection**
	Kamal Singhrao: **Implementation of high-quality motion-compensated SART (mcSART) CBCT imaging using the 5D motion model** (pre-recorded)
2:00 pm	George Coutracon: **pCT image quality comparisons with CARP, DROP and TVS**
	Ethan DeJongh: **ProtonVDA pCT Update: Algorithms and Images**
3:00 PM - 4:00 PM	Breakout Groups Star Party

Time (PDT)	Wednesday August 04, 2021
5:30 AM	Coffee Klatsch
6:00 AM	Marie-Catherine Vozenin: **From irradiation at ultrahigh dose rate to FLASH Radiotherapy: Experimental, conceptual and clinical challenges**
7:00 am	Stefanie Kaser: **The TIGRE toolbox and its application to ion imaging**
	Victor Tvrdy: **A Phenomenological Approach to Modeling Nanodosimetric Quantities**
8:00 am	Natasha Le, Jorge (Naoki) Dominguez: **Gold Nanostars** **(1) Synthesis, Functionalization, and Applications** **(2) Geant4-DNA Monte Carlo Simulations**
	Magdalena Grochowska, Omar Rodriguez: **Simulating the Radiation Chemistry of FLASH Radiation using TOPAS-nBio (1) Including Reactions of Biological Importance (2) Combining Heterogeneous and Homogeneous Chemistry**
9:00 am	Coffee Break/Breakout Groups
	Sam Flynn: **Application of CMOS Detectors to Microbeam Dosimetry.**
10:00 AM	Niklas Wahl, Florian Barkmann, Yair Censor: **matRad (1) Introduction, Ongoing Developments and Related Pojects (2) Application of Superiorization to Treatment Planning**
	Amit Bennan: **Joint optimization of photon-carbon ion combined treatments**
11:00 am	Paulina Stasica: **Experimental validation of LET spectra in mixed radiation fields with the TimePix technology for advanced radiobiological modeling in proton therapy**
	Jorge (Naoki) Dominguez: **Plasmid DNA damage simulations in Geant4-DNA using radiation chemistry: Current status and future developments**
12:00 pm	*Short graduate student research presentation*
	Lunch/Dinner Break/Breakout Groups
1:00 pm	Frankis Almaguel: **Integrating Theranostics and Radiation Oncology**

	Antoni Rucinski: **FRED: A GPU Monte Carlo Platform for Clinical Use**
2:00 pm	Andrew Best: **Decreasing NTCP Through Proton Range Uncertainty Reduction**
	Scott Penfold: **Proton Therapy and Proton Imaging in Australia**
3:00 PM - 4:00 PM	Breakout Groups Star Party