



Program as at 25 May 2019

Program is subject to change

Sunday 23 June 2019

13:30 — 18:00	Registration open
14:30 — 16:00	Celebrating the career of Prof F. P Guengerich
16:00 — 17:00	Plenary lecture
	Prof. F. P. Guengerich, Vanderbilt University School of Medicine, USA <i>Conformational changes in binding of substrates with human cytochrome P450 enzymes</i>
17:00 — 19:00	Welcome reception

Monday 24 June 2019

07:30 — 18:00	Registration open	
08:20 — 08:30	Conference official opening	
	Prof Peter Høj, Vice-Chancellor, The University of Queensland, Australia	
08:30 — 10:15	Plenary session: Higher order P450 structural biology: Quaternary structures and metabolon formation	
08:30 — 09:15	Prof Birger Lindberg Moller, University of Copenhagen, Denmark <i>P450 driven production of plant natural products</i>	
09:15 — 09:45	Dr Ilia Denisov, University of Illinois, USA <i>Role of redox partner interactions in the CYP17A1 catalytic mechanism and kinetics</i>	
09:45 — 10:15	Dr Anja Greule, Monash University, Australia <i>Kistamicin biosynthesis reveals the biosynthetic requirements for production of highly active crosslinked glycopeptide antibiotics</i>	
10:15 — 11:00	Morning tea	
11:00 — 12:45	Concurrent session 1	
	Molecular modelling of P450 systems	P450s in in vitro drug metabolism and pharmacokinetics
11:00 — 11:30	Prof Rebecca Wade, Heidelberg University, Germany <i>Influence of sequence variation on the membrane and protein interactions of cytochrome P450 enzymes</i>	Prof Hiroshi Yamazaki, Showa Pharmaceutical University, Japan <i>Roles of human cytochrome P450 enzymes in drug oxidation: Comparison of in vitro and in vivo system results</i>
11:30 — 12:00	Prof John Hackett, Virginia Commonwealth University, USA <i>Cytochrome P450 19A1 dynamics and ligand recognition in membranes</i>	Dr Ulrik Jurva, AstraZeneca, Sweden <i>Cytochrome P450 driven drug design</i>
12:00 — 12:30	Dr Pramod Nair, Flinders University, Australia <i>The mechanism of the cooperative binding of CYP2C9 ligands: Insights from molecular dynamics simulations</i>	Dr Andrew Parkinson, XPD Consulting, USA <i>In vitro studies of drug clearance and drug interactions: My top-ten list of honest mistakes in experimental design and interpretation</i>
12:30 — 12:45	Mr Alec Follmer, University of California Irvine, USA <i>The role of dynamics in P450cam catalysis</i>	Speaker to be confirmed
12:45 — 13:45	Lunch	

13:45 — 15:15	Concurrent session 2	
	Interactions with redox partners	Metabolic and process engineering of P450s for biotechnological applications
13:45 — 14:15	Dr Gilles Truan , INRA Occitanie, France <i>Analysis of the conformational changes of the human NADPH cytochrome P450 reductase by insertion of unnatural amino acids and smFRET</i>	Prof Volker Sieber , The Technical University of Munich, Germany <i>Production of propene from n-butanol: A three-step cascade utilizing the cytochrome P450 fatty acid cecarboxylase OleT_{JE}</i>
14:15 — 14:45	Prof James Kincaid , Marquette University, USA <i>Using resonance Raman spectroscopy to reveal active site structure and dynamics in the P450 catalytic cycle</i>	Assoc Prof Anton Glieder , Graz University of Technology, Austria <i>Human drug metabolite synthesis catalysed by recombinant P450 enzymes</i>
14:45 — 15:00	Assoc Prof Nikos Hatzakis , University of Copenhagen, Denmark <i>Selective P450 activation by biasing P450 oxidoreductase conformational sampling: A single molecule insight</i>	Speaker to be confirmed
15:00 — 15:15	Dr Michel Kranendonk , Universidade Nova de Lisboa, Portugal <i>Putative motif in the FMN-domain of human cytochrome P450 oxidoreductase involved in its interaction with structurally diverse redox partners</i>	
15:15 — 15:45	Afternoon tea	
15:45 — 17:15	Concurrent session 3	
	Novel P450 chemistry – stretching the definition of P450s	P450s in plant-insect ecology and the future of pesticides
15:45 — 16:15	Prof Yasuo Ohnishi , The University of Tokyo, Japan <i>Cytochrome P450 nitrene transferase: An enzyme responsible for the formation of 6- and 5-membered rings in benzastatin biosynthesis</i>	Prof David Heckel , Max Planck Institute for Chemical Ecology, Germany <i>CYP337B3: The chimera that conquered the world</i>
16:15 — 16:45	Dr Shengying Li , Shandong University, China <i>The new P450 chemistry involved in rifamycin biosynthesis</i>	Dr Heping Han , University of Western Australia, Australia <i>A novel cytochrome P450 CYP81A10v7 endows herbicide metabolic resistance in <i>Lolium rigidum</i></i>
16:45 — 17:15	Dr Sean Natoli , University of California-Berkeley, USA <i>Noble Metal Substitution in P450 enzymes for Catalytic Amination</i>	Prof Phil Batterham , The University of Melbourne, Australia <i>Lessons from the CYP6G1 paradigm on the evolution of insecticide resistance</i>
17:15 — 18:00	Poster pitch presentations, including networking drinks	
18:00 —	Evening at leisure	

Tuesday 25 June 2019

08:00 — 18:00	Registration open
08:30 — 10:15	Plenary session: Structural biology of human P450s
08:30 — 09:15	Prof Emily Scott , University of Michigan, USA <i>Structural flexibility of family 1 cytochrome P450 enzymes to accommodate diverse ligands</i>
09:15 — 09:45	Prof Eric Johnson , Scripps Research, USA <i>Structural biology of human drug metabolizing enzymes: Diversity, plasticity and applications</i>
09:45 — 10:15	Dr Kirsty McLean , The University of Manchester, UK <i>Structures and drug targeting of <i>M. tuberculosis</i> P450 enzymes: Screening for function and inhibition</i>
10:15 — 11:00	Morning tea

11:00 — 12:45	Concurrent session 4	
	Mechanistic enzymology of P450s	Extrahepatic P450s in health and disease
11:00 — 11:30	Prof Tom Pochapsky , Brandeis University, USA <i>Substrate recognition and orientation in cytochrome P450 involves the entire enzyme</i>	Dr Rheem Totah , University of Washington, USA <i>CYP2J2 and EETs in diabetes and cardiovascular disease</i>
11:30 — 12:00	Dr Kshatresh Dutta Dubey , Shiv Nadar University, India <i>Reassessing cytochrome P450 mechanism through the dynamical perspective</i>	Assoc Prof Michael Sorich , Flinders University, Australia <i>Extracellular vesicles as novel markers of in vivo Cytochrome P450 phenotype</i>
12:00 — 12:30	Prof John Dawson , University of South Carolina, USA	Prof Matthias Bureik , Tianjin University, China <i>Extrahepatic human CYPs - CYP4Z1 and more</i>
12:30 — 12:45	Assoc Prof Jeffrey Harmer , The University of Queensland, Australia <i>A structural model of a P450-ferredoxin complex from orientation-selective double electron-electron resonance spectroscopy</i>	Speaker to be confirmed
12:45 — 13:45	Lunch ICCP450 committee meeting	
14:00 — 17:30	Off-site excursions	
	Lone Pine Koala Sanctuary 14:00 - Coaches depart The University of Queensland 17:15 – Coaches depart Lone Pine Koala Sanctuary, stopping at The UQ Women’s College and South Bank	Mirrabooka Aboriginal Experience 14:00 - Coaches depart The University of Queensland After the performance, taxis will be booked for guests staying at The UQ Women’s College. Delegates staying at South Bank can enjoy a leisurely stroll along the river to their hotel.
19:00 — 23:00	Conference dinner Level 12 Rooftop, Rydges South Bank, at the corner of Grey & Glenelg Streets, South Bank	

Wednesday 26 June 2019

08:00 — 18:00	Registration open	
08:30 — 10:15	Plenary session: Sterol-metabolising P450s in health and disease	
08:30 — 09:15	Dr Irina Pikuleva , Case Western Reserve University, USA <i>CYP46A1 as a potential target for Alzheimer's disease treatment</i>	
09:15 — 09:45	Prof Toshiyuki Sakaki , Toyama Prefectural University, Japan <i>Molecular mechanism of vitamin D action in the rats genetically deficient in CYP27B1 or vitamin D receptor</i>	
09:45 — 10:15	Assoc Prof Robert Tuckey , The University of Western Australia, Australia <i>CYP27A1 but not CYP2R1 can metabolise vitamin D3-3-sulfate</i>	
10:15 — 11:00	Morning tea	
11:00 — 12:45	Concurrent session 5	
	Steroids across the biosphere	P450s in drug discovery pipelines (Industry Forum)
11:00 — 11:30	Prof Rita Bernhardt , Saarland University, Germany <i>Bacterial and mammalian steroid hydroxylases: What can they learn from each other?</i>	Dr Ronald Scott Obach , Pfizer, USA <i>Late stage lead diversification utilizing cytochrome P450 enzymes</i>
11:30 — 12:00	Prof Richard Auchus , University of Michigan, USA <i>Clinical applications of steroidogenic cytochrome P450 inhibitors</i>	Dr Griff Humphreys , Aranmore Pharma Consultants, USA <i>P450s in drug discovery pipeline: Perspectives on methods to optimize and characterize the interaction of new medicines with P450s</i>
12:00 — 12:30	Prof Amanda Swart , Stellenbosch University, South Africa <i>The promiscuous role of CYP17A1 in the metabolism of C11-oxy C21 steroids</i>	Dr Michael Wester , Vertex Pharmaceuticals, USA <i>High-Throughput In Vitro Tools to Assess Potential Drug-Drug Interactions</i>
12:30 — 12:45	Assoc Prof Lisa Martin , Monash University, Australia <i>One enzyme, two reactions: a story about cytochrome P450c17</i>	Dr Natalie Hosea , Takeda, United States <i>P450 mediated clearance: From screening to mechanistic studies for PK predictions</i>
12:45 — 13:45	Lunch Industry workshop – Shimadzu	

13:45 — 15:15	Concurrent session 6	
	Light-driven catalysis and other novel ways to support P450s	Reactive metabolites and adverse reactions: P450s in molecular toxicology
13:45 — 14:15	Assoc Prof Lionel Cheruzel , San Jose State University, USA <i>Light-triggered P450 biocatalysis using Ru(II)-diimine complexes</i>	Prof Ana Alfirevic , University of Liverpool, UK <i>Pharmacogenomics of drug-induced hypersensitivity</i>
14:15 — 14:45	Prof Poul-Erik Jensen , University of Copenhagen, Denmark <i>Light-driven biosynthesis: Optimizing electron transfer to monooxygenases</i>	Prof Xinxin Ding , University of Arizona, USA <i>Convergence of CYP2A/2F and CYP19A1 in the mechanism of chemical-induced lung toxicity</i>
14:45 — 15:15	Prof Chul-Ho Yun , Chonnam National University, South Korea <i>NADPH-independent cytochrome P450 catalysis through flavin-mediated transfer of photo-induced electrons</i>	Assoc Prof Chonlaphat Sukasem , Ramathibodi Hospital, Mahidol University, Thailand <i>HLA, CYP, and DDI: The SCAR determinant and contributing factors</i>
15:15 — 15:45	Afternoon tea	
15:45 — 17:15	Concurrent session 7	
	Evolution and biodiversity	Plant P450s in the biosynthesis of terpenoids and other interesting secondary metabolites
15:45 — 16:15	Prof Elizabeth Gillam , The University of Queensland, Australia <i>A Dobzhanskian view of P450 form and function: Charting the evolutionary trajectories of xenobiotic-metabolising P450s using ancestral sequence reconstruction</i>	Dr Mette Sorensen , University of Copenhagen, Denmark <i>No rule without exceptions: Reconfiguration of cyanogenic glucoside biosynthesis across plant evolution</i>
16:15 — 16:45	Prof Galina Lapesheva , Vanderbilt University School of Medicine, USA <i>Lineage-specific features in CYP51 catalysis and inhibition</i>	Prof James De Voss , The University of Queensland, Australia
16:45 — 17:00	Dr Catherine Grueber , The University of Sydney, Australia <i>A diversity of diversifying selection on koala cytochrome P450 gene sequences</i>	Prof Shingo Nagano , Tottori University, Japan <i>Crystal structures of CYP90B1, a key enzyme in brassinosteroid biosynthesis</i>
17:00 — 17:15	Ms Caitlyn Perry , The University of Melbourne, Australia <i>P450 conservation as a window on the evolution of ecdysteroid synthesis</i>	
17:15 — 18:00	Poster pitch presentations, including networking drinks	
18:00 —	Evening at leisure	

Thursday 27 June 2019

08:00 — 17:00	Registration open
08:30 — 10:15	Plenary session: Mining the (micro)biome: Novel P450s from the (micro) biosphere
08:30 — 09:15	Prof Andrew Munro , University of Manchester, UK
09:15 — 09:45	Prof Greg Challis , University of Warwick, UK <i>Unusual cytochrome P450-catalysed transformations in the biosynthesis of the thaxtomin phytotoxins</i>
09:45 — 10:15	Dr Stephen Bell , University of Adelaide, Australia <i>The Cytochrome P450 Monooxygenases of Frankia sp. Eu1c (Frankia inefficax sp.)</i>
10:15 — 11:00	Morning tea

11:00 — 12:45		
Concurrent session 8		
	Development of P450s for applications in biocatalysis	Biophysical approaches to studying P450 conformational dynamics
11:00 — 11:30	Prof Vlada B Urlacher , Heinrich Heine University, Germany <i>Protein and substrate engineering for selective oxidations catalyzed by P450 enzymes</i>	Prof Beatrice Vallone , Sapienza Università di Roma, Italy <i>Conformational plasticity in macrolide biosynthetic P450 cytochromes</i>
11:30 — 12:00	Prof Gianfranco Gilardi , University of Torino, Italy <i>Engineering catalytically self-sufficient human P450 3A4 and P45019A1 (aromatase) active in solution and on electrode surfaces</i>	Assoc Prof Nitin Jain , University of Tennessee, USA <i>Fifty shades of red: The multi-faceted dynamic landscape in cytochrome P450s</i>
12:00 — 12:15	Ms Sandra Ortega Ugalde , Vrije Universiteit, Netherlands <i>Evaluation of luminogenic substrates as probe substrates for bacterial Cytochrome P450 enzymes: Application to Mycobacterium tuberculosis</i>	Prof Bill Atkins , University of Washington, USA <i>Ligand and protein dynamics of CYP3A4</i>
12:15 — 12:30	Dr Hazel Girvan , University of Manchester, UK <i>Characterisation of CYP152K6, a new peroxygenase P450</i>	
12:30 — 12:45	Dr Giovanna Di Nardo , University of Turin, Italy <i>The crystal structure of class VII bacterial CYP116B5 heme domain provides the basis for rational design of new biocatalysts</i>	Assoc Prof Haoming Zhang , The University of Michigan, USA <i>Structure and dynamics of cytochrome P450 CYP102A1 enzyme revealed by CryoEM</i>
12:45 — 13:30 Lunch		
13:30 — 15:00		
Concurrent session 9		
	Engineering of P450 systems for biocatalysis	Structural aspects of human P450s in treatment of disease
13:30 — 14:00	Prof Sabine Flitsch , The University of Manchester, UK <i>Applications of P450 monooxygenases in enzyme cascades</i>	Prof James Halpert , University of Connecticut, USA <i>The CYP2B6 journey from a phantom to a recognized contributor to human drug metabolism: Biochemical, biophysical, and structural studies</i>
14:00 — 14:30	Prof Luet Wong , University of Oxford, UK <i>Developing CYP102A1 for applications in synthesis</i>	Dr Mary Paine , Washington State University, USA <i>Untangling mechanisms underlying natural product-drug interactions</i>
14:30 — 15:00	Prof Osami Shoji , Nagoya University, Japan <i>Use of decoy molecules to trick cytochrome P450BM3 into hydroxylating nonnative substrates</i>	Prof Eric Chun Yong Chan , National University of Singapore, Singapore <i>Kinetic and structural insights on slow tight binding inhibition of CYP17A1 by Abiraterone and its clinical implications</i>
15:00 — 15:30 Afternoon tea		
15:30 — 16:45		
Concurrent session 10		
	Looking to the future (Early career researcher session): Understanding P450 "omics" in the era of big data	Regulation of P450 expression: Natural and artificial
15:30 — 15:55	Ms Rochelle Soo , The University of Queensland, Australia	15:30 — 16:00 Dr Eddie Morgan , Emory University, USA <i>Enzyme-selective regulation of P450 degradation by nitric oxide</i>
15:55 — 16:20	Mr Gabe Foley , The University of Queensland, Australia <i>Engineering cytochrome P450s from ancestral predictions using the novel tool GRASP</i>	16:00 — 16:30 Prof William Rainey , University of Michigan, USA <i>Hijacking CYP11B2 (aldosterone synthase) expression and aldosterone production with adrenal targeted Gq-coupled DREADD expression</i>
16:20 — 16:45	Ms Sarah Glass , Vanderbilt University School of Medicine, USA <i>Deorphanizing cytochrome P450 enzymes and their reactions</i>	16:30 — 16:45 Assist Prof Tsung-I Hsu , Taipei Medical University, Taiwan <i>CYP17A1 promotes glioblastoma development through regulating protein maturation</i>
16:50 — 17:15 Conference closing ceremony: Presentation of awards and upcoming meetings		