

ICCP450 *Brisbane, Australia*

Conference program



Sunday 23 June 2019

refers to building location # refers to abstract number

13:30 – 18:00	Registration open Foyer, GHD Auditorium, Advanced Engineering Building #49
14:30 – 16:00	Celebrating the career of Prof F P Guengerich Room: GHD Auditorium, Advanced Engineering Building #49 Chair: Prof Elizabeth Gillam
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> #100
17:00 – 19:00	Welcome reception Advanced Engineering Building #49

Monday 24 June 2019

07:30 – 18:00	Registration open 07:30 – 10:00 GHD Auditorium foyer, Advanced Engineering Building #49 10:00 – 18:00 Ground floor, Hawken Engineering Building #50	
08:20 – 08:30	Conference official opening Room: GHD Auditorium, Advanced Engineering Building #49 Chairs: Prof Elizabeth Gillam and Prof James De Voss Acknowledgement of country Prof Elizabeth Gillam, The University of Queensland, Australia About ICCP450 Prof F P Guengerich, Vanderbilt University School of Medicine, USA Conference 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> #101	
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> #102	
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> #103	
10:15 – 11:00	Morning tea Hawken Engineering Building #50	
11:00 – 12:45	Concurrent session I	
	Molecular modelling of P450 systems Room: T103, Hawken Engineering Building #50 Chairs: Prof Eric Johnson and Prof William Atkins	P450s in in vitro drug metabolism and pharmacokinetics sponsored by UCB Room: T105, Hawken Engineering Building #50 Chairs: Dr Ronald Scott Obach and Dr Natalie Hosea
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> #104	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> #108
11:30 – 12:00	Prof John Hackett, Virginia Commonwealth University, USA <i>Cytochrome P450 19A1 dynamics and ligand recognition in membranes</i> #105	Dr Ulrik Jurva, AstraZeneca, Sweden <i>Cytochrome P450 driven drug design</i> #109
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> #106	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> #110
12:30 – 12:45	Mr Alec Follmer, University of California Irvine, USA <i>The role of dynamics in P450cam catalysis</i> #107	Dr Jana Nekvindova, University Hospital Hradec Kralove, Czech Republic <i>What is it that down-regulates CYP expression in hepatocellular carcinomas?</i> #111
12:45 – 13:45	Lunch and poster presentations (A) Hawken Engineering Building #50	

13:45 – 15:15		Concurrent session 2	
	Interactions with redox partners Room: T103, Hawken Engineering Building #50 Chairs: Assoc Prof Robert Tuckey and Assoc Prof Amit Pandey	Metabolic and process engineering of P450s for biotechnological applications sponsored by CSIRO Room: T105, Hawken Engineering Building #50 Chairs: Prof Luet Wong and Prof Gianfranco Gilardi	
13:45 – 14:15	Dr Gilles Truan , Université de Toulouse, INSA, France <i>Analysis of the conformational changes of the human NADPH cytochrome P450 reductase by insertion of unnatural amino acids and smFRET</i> #112	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 OleTJE</i> #116	
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> #113	Assoc Prof Anton Glieder , Graz University of Technology, Austria <i>Human drug metabolite synthesis catalysed by recombinant P450 enzymes</i> #117	
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> #114	Dr Jan Kiebitz , Fraunhofer Institute IZI-BB, Germany <i>Oxyfunctionalization of pharmaceuticals by fungal peroxxygenases</i> #118	
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> #115	Prof Donghak Kim , Konkuk University, South Korea <i>Regioselective Preference of CYP52A23 from Candida albicans</i> #119	
15:15 – 15:45	Afternoon tea Hawken Engineering Building #50		
15:45 – 17:15		Concurrent session 3	
	Novel P450 chemistry – stretching the definition of P450s Room: T103, Hawken Engineering Building #50 Chairs: Prof Andrew Munro and Prof John Dawson	P450s in plant-insect ecology and the future of pesticides Room: T105, Hawken Engineering Building #50 Chairs: Dr Charles Robin and Dr Tomer Ventura	
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> #120	Prof David Heckel , Max Planck Institute for Chemical Ecology, Germany <i>CYP337B3: The chimera that conquered the world</i> #123	
16:15 – 16:45	Dr Shengying Li , Shandong University, China <i>The new P450 chemistry involved in rifamycin biosynthesis</i> #121	Dr Heping Han , University of Western Australia, Australia <i>A novel cytochrome P450 CYP81A10v7 endows herbicide metabolic resistance in Lolium rigidum</i> #124	
16:45 – 17:15	Dr Sean Natoli , University of California-Berkeley, USA <i>Noble Metal Substitution in P450 enzymes for Catalytic Amination</i> #122	Prof Phil Batterham , The University of Melbourne, Australia <i>Lessons from the CYP6G1 paradigm on the evolution of insecticide resistance</i> #125	
17:25 – 18:30		Poster pitch presentations, including networking drinks	
	Room: N201, Hawken Engineering Building #50 Themes presented: A. P450 mechanisms B. P450 structural biology E. Molecular modelling	Room: N202, Hawken Engineering Building #50 Themes presented: J. Bioinformatics M. P450s in drug and other human xenobiotic metabolism (DMPK) P. P450s in molecular toxicology R. P450s in human physiology and disease	
	Prof Laura Furge , Kalamazoo College, USA <i>Tryptophan-75 is a potential gating residue of cytochrome P450 2D6</i> #2	Ms Courtney Lewis , University of The Sunshine Coast, Australia <i>Defining the CYP450 repertoire across metamorphosis in spiny lobsters</i> #39	
	Dr Anna Haduch , Polish Academy of Sciences, Poland <i>The effect of ageing and tryptophan hydroxylase 2 (TPH2) deficit on the CYP2D activity in rat brain and liver</i> #3	Dr Porntipa Korprasertthaworn , Mahidol University, Thailand <i>The inhibitory effects of Thai herb extracts on CYP450-mediated anticancer metabolism</i> #48	
	Ms Gabriela Schröder , North Carolina State University, USA <i>Investigating the catalytic cycle and redox partner protein dependent dynamics of cytochrome P450 (CYP450) by neutron scattering</i> #5	Prof Toshiro Niwa , Shujitsu University, Japan <i>Dopamine formation from p-tyramine mediated by human CYP2D6 in the brain</i> #50	
	Dr Grazyna Szklarz , West Virginia University, USA <i>Molecular basis for caffeine oxidation by human cytochromes P450 1A1 and 1A2</i> #6	Mrs Susanne Steinbrecht , Institute of Biotechnology, Germany <i>Metabolic activity testing can underestimate acute drug cytotoxicity as revealed by HepG2 cell clones overexpressing cytochrome P450 2C19 and 3A4</i> #52	
	Ms Julie Ducharme , McGill University, Canada <i>Probing the P450 3A4 allosteric site via bioconjugation of ligand analogues</i> #1	Dr Satoshi Yamaori , Shinshu University Hospital, Japan <i>Characterization of epalrestat as a highly selective CYP4A11 inhibitor</i> #54	
	Dr Thomas Lautier , Université de Toulouse, INSA, France <i>Ordered chimeraesis applied to CYP2B P450 enzymes</i> #7	Prof Young-Jin Chun , Chung-ang University, South Korea <i>Human CYP1B1 protects cancer cell apoptosis through TRAIL-FOXO3-Skp2 pathway</i> #65	
	Dr Pramod Nair , Flinders University, Australia <i>Comparison of computational methods for site(s) of metabolism (SOM) prediction of protein kinase inhibitors metabolised by CYP3A4</i> #14	Dr Miyu Nishikawa , Toyama Prefectural University, Japan <i>Comparative study of 25-hydroxyvitamin D3 treatment between Cyp27b1 knockout and Vdr (R270L) rats to evaluate clinical effects of 25(OH)D3</i> #69	
18:00 –	Evening at leisure		

Tuesday 25 June 2019

08:00 – 18:00

Registration open

08:00 – 10:00 GHD Auditorium foyer, Advanced Engineering Building #49

10:00 – 18:00 Ground floor, Hawken Engineering Building #50

08:30 – 10:15

Plenary session: Structural biology of P450s important to human health

Room: GHD Auditorium, Advanced Engineering Building #49

Chairs: Prof John Miners and Prof Tom Pochapsky

08:30 – 09:15

Prof Emily Scott, University of Michigan, USA

Structural flexibility of family 1 cytochrome P450 enzymes to accommodate diverse ligands #200

09:15 – 09:45

Prof Eric Johnson, Scripps Research, USA

Structural biology of human drug metabolizing enzymes: Diversity, plasticity and applications #201

09:45 – 10:15

Dr Kirsty McLean, The University of Manchester, UK

Structures and drug targeting of M. tuberculosis P450 enzymes: Screening for function and inhibition #202

10:15 – 11:00

Morning tea

Hawken Engineering Building #50

11:00 – 12:45

Concurrent session 4

11:00 – 11:30

Mechanistic enzymology of P450s

Room: T103, Hawken Engineering Building #50

Chairs: Dr Stephen Bell and Prof F P Guengerich

Prof Tom Pochapsky, Brandeis University, USA

Substrate recognition and orientation in cytochrome P450 involves the entire enzyme #203

11:30 – 12:00

Dr Kshatresh Dutta Dubey, Shiv Nadar University, India

Reassessing cytochrome P450 mechanism through the dynamical perspective #204

12:00 – 12:30

Prof John Dawson, University of South Carolina, USA

Caught in the act: Monitoring O-O bond cleavage to form cytochrome P450 Compound I in real time #205

12:30 – 12:45

Assoc Prof Jeffrey Harmer, The University of Queensland, Australia

A structural model of a P450-ferredoxin complex from orientation-selective double electron-electron resonance spectroscopy #206

12:45 – 13:45

Lunch and poster presentations (B)

Hawken Engineering Building #50

ICCP450 International Advisory Committee meeting

13:45

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



Mirraboopa 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, corner of Grey & Glenelg Streets, South Bank

Wednesday 26 June 2019

08:00– 18:00

Registration open

08:00 — 10:00 GHD Auditorium foyer, Advanced Engineering Building #49
10:00 — 18:00 Ground floor, Hawken Engineering Building #50

08:30 – 10:15

Plenary session: Sterol-metabolising P450s in health and disease

Room: GHD Auditorium, Advanced Engineering Building #49

Chairs: Prof Raymond Rodgers and Prof Richard Auchus

08:30 – 09:15

Prof Irina Pikuleva, Case Western Reserve University, USA
CYP46A1 as a potential target for Alzheimer's disease treatment #300

09:15 – 09:45

Prof Toshiyuki Sakaki, Toyama Prefectural University, Japan
Molecular mechanism of vitamin D action in the rats genetically deficient in CYP27B1 or vitamin D receptor #301

09:45 – 10:15

Assoc Prof Robert Tuckey, The University of Western Australia, Australia
CYP11A1 and CYP27A1 activate the pre-vitamin D3 photoproduct, lumisterol, by hydroxylating its side chain #302

10:15 – 11:00

Morning tea

Hawken Engineering Building #50

11:00 – 12:45

Concurrent session 5

P450s in drug discovery pipelines (Industry Forum)

Room: T103, Hawken Engineering Building #50

Chairs: Prof Elizabeth Gillam and Dr Andrew Parkinson

11:00 – 11:20

Dr Ronald Scott Obach, Pfizer, USA
Late stage lead diversification utilizing cytochrome P450 enzymes #303

11:20 – 11:40

Dr Griff Humphreys, Aranmore Pharma Consultants, USA
P450s in drug discovery pipeline: Perspectives on methods to optimize and characterize the interaction of new medicines with P450s #304

11:40 – 12:00

Dr Michael Wester, Vertex Pharmaceuticals, USA
High-throughput in vitro tools to assess potential drug-drug interactions #305

12:00 – 12:20

Dr Natalie Hosea, Takeda, USA
P450 mediated clearance: From screening to mechanistic studies for PK predictions #306

12:20 – 12:45

Panel discussion

12:45 – 13:45

Lunch and poster presentations (C)

Hawken Engineering Building #50

13:45 – 15:15

Concurrent session 6

Light-driven catalysis and other novel ways to support P450s

Room: T103, Hawken Engineering Building #50

Chairs: Prof Elizabeth Gillam and Prof Birger Lindberg Moller

13:45 – 14:15

Assoc Prof Lionel Cheruzel, San Jose State University, USA
Light-triggered P450 biocatalysis using Ru(II)-diimine complexes #311

14:15 – 14:45

Prof Poul-Erik Jensen, University of Copenhagen, Denmark
Light-driven biosynthesis: Optimizing electron transfer to monooxygenases #312

14:45 – 15:15

Prof Chul-Ho Yun, Chonnam National University, South Korea
NADPH-independent cytochrome P450 catalysis through flavin-mediated transfer of photo-induced electrons #313

Steroids across the biosphere

Room: T105, Hawken Engineering Building #50

Chairs: Assoc Prof Robert Tuckey and Prof Irina Pikuleva

11:00 – 11:30

Prof Rita Bernhardt, Saarland University, Germany
Bacterial and mammalian steroid hydroxylases: What can they learn from each other? #307

11:30 – 12:00

Prof Richard Auchus, University of Michigan, USA
Clinical applications of steroidogenic cytochrome P450 inhibitors #308

12:00 – 12:30

Prof Amanda Swart, Stellenbosch University, South Africa
The promiscuous role of CYP17A1 in the metabolism of C11-oxy C21 steroids #309

12:30 – 12:45

Assoc Prof Lisa Martin, Monash University, Australia
One enzyme, two reactions: A story about cytochrome P450c17 #310

Reactive metabolites and adverse reactions: P450s in molecular toxicology

Room: T105, Hawken Engineering Building #50

Chairs: Dr Griff Humphreys and Assoc Prof Rheem Totah

Prof Ana Alfirevic, University of Liverpool, UK
Pharmacogenomics of drug-induced hypersensitivity #314

Prof Xinxin Ding, University of Arizona, USA
Convergence of CYP2A/2F and CYP19A1 in the mechanism of chemical-induced lung toxicity #315

Assoc Prof Chonlaphat Sukasem, Ramathibodi Hospital, Mahidol University, Thailand
HLA, CYP, and DDI: The SCAR determinant and contributing factors #316

15:15 – 15:45

Afternoon tea

Hawken Engineering Building #50



15:45 – 17:15 Concurrent session 7	
	<p>Evolution and biodiversity Room: T103, Hawken Engineering Building #50 Chairs: Assoc Prof Lisa Martin and Prof Phil Batterham</p>
	<p>Plant P450s in the biosynthesis of terpenoids and other interesting secondary metabolites Room: T105, Hawken Engineering Building #50 Chairs: Dr Stephen Bell and Prof Rita Bernhardt</p>
15:45 – 16:15	<p>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> #317</p>
	<p>Dr Mette Sorensen, University of Copenhagen, Denmark <i>No rule without exceptions: Reconfiguration of cyanogenic glucoside biosynthesis across plant evolution</i> #321</p>
16:15 – 16:45	<p>Prof Galina Lepesheva, Vanderbilt University School of Medicine, USA <i>Lineage-specific features in CYP51 catalysis and inhibition</i> #318</p>
	<p>Prof James De Voss, The University of Queensland, Australia <i>Steroid Saponin Biosynthetic Cytochromes P450 in <i>Dioscorea transversa</i></i> #322</p>
16:45 – 17:00	<p>Dr Catherine Grueber, The University of Sydney, Australia <i>A diversity of diversifying selection on koala cytochrome P450 gene sequences</i> #319</p>
	<p>Prof Shingo Nagano, Tottori University, Japan <i>Crystal structures of CYP90B1, a key enzyme in brassinosteroid biosynthesis</i> #323</p>
17:00 – 17:15	<p>Ms Caitlyn Perry, The University of Melbourne, Australia <i>P450 conservation as a window on the evolution of ecdysteroid synthesis</i> #320</p>
17:25 – 18:30 Poster pitch presentations, including networking drinks	
	<p>Room: N201, Hawken Engineering Building #50 Themes presented: F. Novel P450 support systems H. Protein engineering of P450s I. Biotechnological applications of P450s</p>
	<p>Room: N202, Hawken Engineering Building #50 Themes presented: K. Novel P450s from microbes S. P450 evolution U. P450s in plants and plant secondary metabolism W. P450s in steroid biosynthesis and metabolism X. P450s in insects / pesticides</p>
	<p>Dr Silas Mellor, Copenhagen University, Denmark <i>Electron carrier engineering towards increased partitioning of photosynthetic reducing power to cytochrome P450 catalysis</i> #16</p>
	<p>Assoc Prof Brian Monk, University of Otago, New Zealand <i>Exploring the impact of amino acid changes on fungal sterol 14α-demethylase structure and function using a yeast model</i> #42</p>
	<p>Miss Wenyu Chen, University of Oxford, UK <i>Site-directed mutagenesis of P450BM3 to improve steroid hydroxylation</i> #18</p>
	<p>Mr Justin Miller, University of Illinois at Urbana-Champaign, USA <i>Investigation of structural residues required for metabolism of loganic acid by <i>Camptotheca acuminata</i> secologanic acid synthases (CYP72As)</i> #74</p>
	<p>Miss Raine Thomson, The University of Queensland, Australia <i>Thermostability correlates with evolutionary age in ancestors of promiscuous xenobiotic-metabolizing enzymes, suggesting a robust ancestor facilitated evolutionary diversification</i> #21</p>
	<p>Dr Stella Child, Vanderbilt University School of Medicine, USA <i>Arginine-124 is involved in electron transfer in a protozoan cytochrome P450 CYP51 enzyme</i> #80</p>
	<p>Ms Xiao Juie Wong, The University of Oxford, UK <i>Wood aroma synthesis by P450-catalysed sesquiterpene oxidation</i> #23</p>
	<p>Dr Michael Reddish, Vanderbilt University School of Medicine, USA <i>Some reactions require commitment: Processivity of human P450 11B2 reactions</i> #83</p>
	<p>Mr Ngoc Tan Cao, Chonnam National University, South Korea <i>Regioselective hydroxylation of monacolin J by CYP102A1 to produce 6'-hydroxymethyl metabolite, an inhibitor of HMG-CoA reductase</i> #28</p>
	<p>Mr Kurt Harris, The University of Queensland, Australia <i>Ancestral reconstruction of cytochrome P450 family 1: Improved thermostability for biocatalysis and insights into CYP1 evolution</i> #72</p>
	<p>Mr Dominic Wittall, University of Manchester, UK <i>Profound alteration of P450 BM3 regioselectivity via a single point mutation</i> #37</p>
	<p>Mr Alex Giang, The University of Melbourne, Australia <i>Evaluating the resistance potential of <i>Drosophila melanogaster</i> cytochrome P450 genes by transgenic overexpression</i> #85</p>
	<p>Mr Jong Min (Joseph) Baek, The University of Queensland, Australia <i>The vertebrate ancestor of cytochrome P450 family 3: Optimization of expression and reaction conditions for industrial application</i> #27</p>
	<p>Miss Lauren Salisbury, The University of Queensland, Australia <i><i>Dioscorea transversa</i> CYP90B57 catalyses the C22R-hydroxylation of cholesterol, an essential step in steroidal saponin biosynthesis</i> #76</p>
18:00 – Evening at leisure	



Thursday 27 June 2019

08:00 – 16:30 Registration open

08:00 – 10:00 GHD Auditorium foyer, Advanced Engineering Building #49

10:00 – 16:30 Ground floor, Hawken Engineering Building #50

08:30 – 10:15 Plenary session: Mining the (micro)biome: Novel P450s from the (micro) biosphere

Room: GHD Auditorium, Advanced Engineering Building #49

Chairs: Prof James De Voss and Prof Sabine Flitsch

08:30 – 09:15 Prof Andrew Munro, University of Manchester, UK

A 2-step transformation of P450 BM3 from a fatty acid hydroxylase to a promiscuous biocatalyst #400

09:15 – 09:45 Prof Greg Challis, University of Warwick, UK

Unusual cytochrome P450-catalysed transformations in the biosynthesis of the thaxtomin phytotoxins #401

09:45 – 10:15 Dr Stephen Bell, University of Adelaide, Australia

The Cytochrome P450 Monooxygenases of Frankia sp. Eul1c (Frankia inefficax sp.) #402

10:15 – 11:00 Morning tea

Hawken Engineering Building #50

11:00 – 12:45 Concurrent session 8

Development of P450s for applications in biocatalysis

Room: T103, Hawken Engineering Building #50

Chairs: Prof James De Voss and Dr Christopher Frei

11:00 – 11:30 Prof Vlada B Urlacher, Heinrich Heine University, Germany

Protein and substrate engineering for selective oxidations catalyzed by P450 enzymes #403

11:30 – 12:00 Prof Gianfranco Gilardi, University of Torino, Italy

Engineering catalytically self-sufficient human P450 3A4 and P45019A1 (aromatase) active in solution and on electrode surfaces #404

12:00 – 12:15 Ms Sandra Ortega Ugalde, Vrije Universiteit, Netherlands

Evaluation of luminogenic substrates as probe substrates for bacterial Cytochrome P450 enzymes: Application to Mycobacterium tuberculosis #405

12:15 – 12:30 Dr Hazel Girvan, University of Manchester, UK

Characterisation of CYP152K6, a new peroxygenase P450 #406

12:30 – 12:45 Dr Giovanna Di Nardo, University of Turin, Italy

The crystal structure of class VII bacterial CYP116B5 heme domain provides the basis for rational design of new biocatalysts #407

Biophysical approaches to studying P450 conformational dynamics

Room: T105, Hawken Engineering Building #50

Chairs: Dr Iliia Denisov and Prof Emily Scott

Prof Beatrice Vallone, Sapienza Università di Roma, Italy

Conformational plasticity in macrolide biosynthetic P450 cytochromes #408

Assoc Prof Nitin Jain, University of Tennessee, USA

Fifty shades of red: The multi-faceted dynamic landscape in cytochrome P450s #409

Prof William Atkins, University of Washington, USA

Ligand and protein dynamics of CYP3A4 #410

Assoc Prof Haoming Zhang, The University of Michigan, USA

Structure and dynamics of cytochrome P450 CYP102A1 enzyme revealed by CryoEM #411

12:45 – 13:30 Lunch

Hawken Engineering Building #50

13:30 – 15:00 Concurrent session 9

Engineering of P450 systems for biocatalysis

Room: T103, Hawken Engineering Building #50

Chairs: Prof Volker Sieber and Prof Vlada B Urlacher

13:30 – 14:00 Prof Sabine Flitsch, The University of Manchester, UK

Applications of P450 monooxygenases in enzyme cascades #412

14:00 – 14:30 Prof Luet Wong, University of Oxford, UK

Developing CYP102A1 for applications in synthesis #413

14:30 – 15:00 Prof Osami Shoji, Nagoya University, Japan

Use of decoy molecules to trick cytochrome P450BM3 into hydroxylating non-native substrates #414

Structural aspects of human P450s in treatment of disease

Room: T105, Hawken Engineering Building #50

Chairs: Dr Michael Wester and Assoc Prof Haoming Zhang

Prof James Halpert, University of Connecticut, USA

The CYP2B6 journey from a phantom to a recognized contributor to human drug metabolism: Biochemical, biophysical, and structural studies #415

Assoc Prof Mary Paine, Washington State University, USA

Untangling mechanisms underlying natural product-drug interactions #416

Prof Eric Chun Yong Chan, National University of Singapore, Singapore

Kinetic and structural insights on slow tight binding inhibition of CYP17A1 by Abiraterone and its clinical implications #417

15:00 – 15:30 Afternoon tea

Hawken Engineering Building #50

15:30 – 16:45 Concurrent session 10	
Looking to the future: Understanding P450 “omics” in the era of big data (Early career researcher session) Room: T103, Hawken Engineering Building #50 Chairs: Dr Charles Robin and Prof John Hackett	Regulation of P450 expression Room: T105, Hawken Engineering Building #50 Chairs: Prof Evan Simpson and Prof Xinxin Ding
15:30 – 15:55 Dr Rochelle Soo , The University of Queensland, Australia <i>In search of cytochromes P450 in bacterial genomes #418</i>	15:30 – 16:00 Prof Edward Morgan , Emory University, USA <i>Enzyme-selective regulation of P450 degradation by nitric oxide #421</i>
15:55 – 16:20 Mr Gabe Foley , The University of Queensland, Australia <i>Engineering cytochromes P450 from ancestral predictions using the novel tool GRASP #419</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 #422</i>
16:20 – 16:45 Ms Sarah Glass , Vanderbilt University School of Medicine, USA <i>Deorphanizing cytochromes P450 enzymes and their reactions #420</i>	16:30 – 16:45 Assist Prof Tsung-I Hsu , Taipei Medical University, Taiwan <i>CYP17A1 promotes glioblastoma development through regulating protein maturation #423</i>
16:50 – 17:15 Conference closing ceremony Presentation of awards and upcoming meetings	
Room: T203, Hawken Engineering Building #50 Chairs: Prof Elizabeth Gillam and Prof James De Voss	