PRELIMINARY PROGRAM (Subject to change)

MONDAY 16TH SEPTEMBER 2019	
0830-0910	Welcome to Country Conference Welcome & Introduction – NIR2019 Chair, Roger Meder & ICNIRS President, Tom Fearn Surf Lifesaving Australia – Chloe Maxwell
0910-1000	**Tomas Hirschfeld Address** Dr José Amigo, Denmark
1000-1030	**Keynote:** Food Science and Food Security: How is NIR helping? - Lola Pérez Marin, Spain
1030-1100	**Morning Tea**

	Dairy	Food Science & Food Security
1100-1115	The role of standards for NIR applications in dairy product analyses #7900 S. Holroyd, New Zealand	Effect of irradiation on near-infrared spectral data of authentic and syrup-diluted honey #7593 M. Manley, South Africa
1115-1130	Milk renneting: a process study by near infrared spectroscopy #7673 L. Strani Italy	Developing a model system for NIR based identification and quantitative analysis of food additives measured via polyethylene foils #7960 J. Slezsák, Hungary
1130-1145	Say Cheese! Upgrading the cheese quality control #7821 K.B. Damkjær, Denmark	Development of a NIRS calibration for Ethiopian barley (*Hordeum vulgare*) lines to predict food and malting quality traits #7843 C. Utschig, Germany
1145-1200	Questions & Discussion	Questions & Discussion
1200-1300	**Lunch**	**ICNIRS PAC Meeting (GCCEC M10)**

	Agricultural Beverages	Agriculture & Horticulture
1300-1315	The use of NIR spectroscopy to predict the key chemical parameters of black tea oxidised at different conditions. #7597 S. Heaney, Ireland	Light scattering in apples and the influence of microstructure #7810 R. Van Beers, Belgium
1315-1330	Classification of the geographical origin of green coffee beans by means of NIR spectroscopy and chemometrics: an inter-laboratory comparison #7717 A. Giraudo, Italy	Investigation of rapid detection for fungal diseases in peaches using hyperspectral imaging and electronic nose #7652 K. Tu, China

Time	Session 1	Session 2
1330-1345	Use of a wild coffees collection to enhance the robustness of calibrations for caffeine and fat quantification in green coffee #7910 F. Davrieux, Reunion	Detection of 'Zebra Chip' disease in 'Russet Burbank' potatoes using visible-near infrared (Vis-NIR) spectroscopy #7637 M. Li, New Zealand
1345-1400	Miniaturised LED prototypes for ripeness evaluation directly in field: test on grape (*Vitis vinifera* L.) #7864 A. Tugnolo, Italy	On-line determination of dry matter content in whole potatoes by NIR spectroscopy #7776 J.P. Wold, Norway
1400-1415	NIRS as a proxy method in metabolomics: Analyzing cool-climate red wines by 2D NIR/NMR correlation maps #7833 K. Sørensen, Denmark	Maturity determination of mango fruit cv. 'Nam Dok Mai Sri Tong' by near infrared spectroscopy #7975 P. Chaiprasart, Thailand
1415-1430	Linking beer NIR chemical features to consumers' taste by text analysis and chemometrics #7841 N. Cavallini, Italy	Using a portable diffuse reflectance near infrared spectrometer to measure the maturity of unopened cotton bolls #7539 R. Long, Australia
1430-1445	Questions & Discussion	Questions & Discussion
1445-1515	**Afternoon Tea**	
	Forestry & Wood	**Cereals & Grains**
1530-1545	Holistic research of NIR light propagation in wood *TBD* S. Tsuchikawa, Japan	Mass scale selection for functional cereal quality by a diagnostic differential NIR-spectral trait and single seed NIT-sorting #7697 L. Munck, Denmark
1545-1600	Temperature and moisture insensitive prediction of biomass calorific value from NIR spectra for on-line applications #7578 G. Hans, Canada	Wheat sprouting: a process monitoring approach by a NIR portable device #7634 S. Grassi, Italy
1600-1615	Hyperspectral imaging inputs for cambial activity, drought and fertilisation interactions of Eucalyptus #7937 G. Chaix, France	Development of mobile sensors for estimation of grain qualities and contaminants to support nutrition and safety of grain-products in developing countries #7973 J. Kholova, India
1615-1630	Advanced online process analyzers for chemical recovery and pulp mill control *TBD* T. Trung, Canada	Good practices to evaluate genotypic variation in stem water-soluble carbohydrate with near infra-red spectroscopy #7954 A. Kelly, Australia
1630-1645	From the lab to the field - development and evaluation of low-cost portable spectrometers for wood quality grading in forest #7828 J. Sandak, Slovenia	High-throughput hyperspectral measurements for classifying and predicting salt content in wheat to identify potential salt tolerance #7868 B. Bruning, Australia
1645-1700	Towards in-mill quality control of timber preservative treatment R. Meder, Australia	Near infrared hyperspectral imaging as a tool for discriminating between common wheat and durum wheat #7660 P. Vermeulen, Belgium.
1700-1715	Questions & Discussion	Questions & Discussion
1715-1815	Publishing in JNIRS: Tips and Hints. R. Meder. Editor-in-Chief, JNIRS.	**Company Snapshots**
1900-2200	**Bruker Night**	
TUESDAY 17TH SEPTEMBER 2019		
0830-0915	**fNIR Plenary** - Ilias Tachtsidis	
0915-1000	**fNIR** - Clinician	
1000-1030	**Morning Tea**	

	fNIR	Soil, Mineralogy, Geoexploration & Remote Sensing
1030-1045		Costar Hydrated mineralogy - mapping the palaeovalleys in the Musgrave Province *#7950* G. Gordon, Australia
1045-1100		Proximal sensing technologies on soils and plants in the Eyre Peninsula *#7980* F. Arsego, Australia
1100-1115		Prediction of physical, chemical, organic and nutritional soil properties by in-situ visible and near infrared spectroscopy *#7320* F. Ammari, France
1115-1130		Deep Learning for predicting soil properties form large NIR spectral database *#7534* B. Minasny, Australia
1130-1145		Spectral classification of nickel laterite deposits in New Caledonia *#7610* E.R. Ramanaidou, Australia
1145-1200		Questions & Discussion
1200-1230		**Poster Flash Session**
1230-1345	**Lunch & Poster Session 1**	
	fNIR	**Agriculture Operations and Residues**
1345-1400		NIR spectroscopy: the gateway to physiology of nutritional traits of the crops. *TBC* S. Choudary. India.
1400-1415		Optical sensor combined with multivariate analysis for characterization of spray deposits *#7688* A.T. Bendiab, France
1415-1430		Steps towards onsite near infrared measurement of sugarcane mill mud properties *#7719* F.E. Barton, USA
1430-1445		Industrial-scale continuous on-line analysis of liquid hog manure by NIR spectroscopy *#7187* P. Williams, Canada
1445-1500		Questions & Discussion
1500-1530	**Afternoon Tea**	
	fNIR	**Chemometrics & Sampling I**
1530-1545		Sampling for NIR analysis *#6980* K.H. Esbensen, Denmark
1545-1600		On the relation between Mahalanobis distance and the statistics T^2 and leverage in Unscrambler and GH in WinISI *#7615* T. Fearn, United Kingdom
1600-1615		Data mean and ratio of absorbance to concentration methods: a novel optimization strategy for near infrared spectroscopy modelling *#7380* Z. Sun, China

1615-1630		Scaling of excess absorption for accurate composition prediction with a minimal calibration method #7544 S. Shibayama, Japan	
1630-1645		VSN: Variable selection for normalisation #7689 J-M. Roger, France	
1645-1700		Rep file embedded locally weighted regression #7748 S. Flanagan, United Kingdom	
1700-1715		Questions & Discussion	
1700-1900	**ICNIRS AGM** **(includes country host presentations and vote for NIR2023 location)**		
1900-2030	**fNIR Dinner**		

WEDNESDAY 18TH SEPTEMBER 2019

	fNIRS	**Museum Science / Archaeology**	
0830-0915		**Keynote:** The Science of Art: near-infrared spectroscopy at the Museum - Paola Ricciardi, United Kingdom	
0915-0930		Lighting the ivory track: Are Near Infrared and Chemometrics Up to the Job? #7802 A.C. Power, Australia	
0930-0945		Detection of organic binder remnants in experimental red ochre rock art paints using reflectance spectroscopy #7711 K.R. Horn, Australia	
0945-1000		Pigment analysis of cultural heritage objects using NIR spectroscopy #7913 E.A. Carter, Australia	
1000-1015		Questions & Discussion	
1015-1045	**Morning Tea**		
	fNIRS	**Aquaphotomics**	**Imaging I**
1045-1100		Plant aquaphotomics: new frontiers #7956 J. Muncan, Japan	Characterization and classification of visible/NIR hyperspectral microscopic images from foodborne pathogenic bacteria #7473 B. Park, USA
1100-1115		Aquaphotomics: From basics to applications and new technologies #7957 R. Tsenkova, Japan	Hyperspectral NIR imaging in the service of forensics sciences: how to identify biological traces for screening purposes #7929 C. Malegori, Italy
1115-1130		Temperature independent quality prediction of kiwifruit juice using aquaphotomics and external parameter orthogonalization #7677 H. Kaur, New Zealand	Improved compressed sensing reconstruction for NIR fluorescence molecular tomography #7505 J. Liu, China
1130-1145		Understanding the complexity of water structures from near-infrared spectra by chemometrics and simulations #7570 X. Shao, China	Coupling polarized light spectroscopy with the Mueller matrix concept in VIS-NIR region to discriminate the absorption and scattering component from complex turbid media #7675 A. Ducanchez, France

1145-1200		Opening the black box of NIR prediction for sugar content of fruits with the aid of NMR-based metabolomics #7783 A. Ikehata, Japan	Improving machine learning classification of paper and ink type using multipoint measurement with the hyperspectral imaging method #7592 S. Sugawara, Japan
1200-1215		Questions & Discussion	Questions & Discussion
1215-1245	**Lunch**		
1300-1600	**ASD Workshop** **Free Afternoon & Organised Tours**		

THURSDAY 19TH SEPTEMBER 2019

0800 - 0900	**Company-sponsored Scientific Presentations**
0900-0945	**Karl Norris Award** Dr Graeme Batten, Australia
	Consumer Science Panel
0945-1000	Portable hardware -
1000-1015	Calibrations: who, what, where, how? - Chris Pitrowski
1015-1030	False positives/false negatives - Tom Fearn
1030-1045	Questions & Discussion
1045-1115	**Morning Tea**

	Instrumentation & Education	Imaging II
1115-1130	MEMS-based lightweight solutions for infrared spectral sensing and imaging #7734 D. Silva, Australia	Applications of hyperspectral imaging and machine learning methods for real-time classification of waste stream components #7573 J. Skvaril, Sweden.
1130-1145	Optimized custom LED illumination system for hyperspectral imaging applications #7769 C.B.P. del Notario, Belgium	NIR hyperspectral imaging of active biodegradable films: a repeatability study #7584 R.F. Teofilo, Brazil.
1145-1200	Lessons from the machine learning community #7772 A. Gahkani, United Kingdom	Water monitoring in biscuits by near infrared hyperspectral imaging #7735 B. Jaillais, France.
1200-1215	Questions & Discussion	Questions & Discussion
1215-1330	**Lunch & Poster Session 2**	

	Medical/Pharma/Biotech/TCM	PAT and IoT
1330-1345	Current trends in NIR spectroscopic quality control and harvest time optimisation of medicinal plants including 2D-COS, quantum chemistry and multivariate algorithms #7816 C.W. Huck, Austria	Determination of gel time and gel point of epoxy curing using evolutionary near infrared spectroscopy #7604 H. Yuan, China
1345-1400	The application of NIR for mosquito-borne diseases; Malaria, Dengue and Zika #7188	Universal models for LNG with a cryogenic gas-liquifier #7710 H. Tanaka, Japan

	M.T. Sikulu-Lord, Australia	
1400-1415	Assessment of NIR pulse relaxation function (PReFx) #7795 R.G. Afkhami, Australia	Empowering portable near infrared spectroscopy sensors as IoT devices for the agri-food sector: The Iberian Pig ham study case #7817 A. Garrido-Varo, Spain
1415-1430	The rapid detection of Zika and dengue viruses in *Aedes aegypti* mosquitoes to produce a rapid response vector control #7720 R. Maciel-de-Freitas, Brazil	Polymer identification and quantification during continuous on-line processes, by near infrared spectroscopy #7915 J. Guilment, France
1430-1445	NIR in continuous manufacture of tablet products *TBD* S. Hammond, USA	Estimation of particle concentration and size distribution from Vis/NIR spectra of minimally diluted suspensions and emulsions #7778 W. Saeys, Belgium
1445-1500	Partial least squares model development to predict the viscosity of shampoo using NIR spectroscopy #7978 K. Haroon, United Kingdom	Using NIR Spectroscopy to Monitor High Shear Wet Granulation Processes: An Example of PAT for a Difficult Industrial Installation #7982 B. Swarbrick, Australia
1500-1515	Questions & Discussion	Questions & Discussion
1515-1545	**Afternoon Tea**	
	Meat and Fish	**Chemometrics and Sampling II**
1545-1600	It's all in the game: fresh vs previously frozen meat determination #7861 P.J. Williams, South Africa	Using ASCA to study sampling - A revisit to a single wheat kernel NIRS study #7849 S.B. Engelsen, Denmark
1600-1615	Inspection of fish fillet mislabelling and substitution using visible and near-infrared and short-wave infrared hyperspectral imaging #7905 J. Qin J, USA	Grouped-lasso logistic regression for geographical origin discrimination of Ganoderma lucidum using Fourier transform infrared spectroscopy #7815 Y. Zhu, Singapore
1615-1630	Quantification of mixed beef adulteration by hyperspectral imaging based on hyperspectral imaging #7930 Y. Feng, China	Building a robust and shareable NIR model of predicting total plant alkaloid of Solanaceae plants based on wavelengths with consistent and stable signals #7625 L. Ni, China
1630-1645	One model to rule them all: Developing universal aquaculture feed composition models #7967 N. Bourne, Australia	Particle swarm optimization (PSO): a powerful tool for the analysis of spectroscopic data #7961 F. Marini, Italy
1645-1700	Predicting the content of 20 minerals in beef using different portable near-infrared spectrometers #7646 N. Patel, Italy	A Kalman filtering approach for fusing predictions from spatially resolved reflectance measurements #7797 M.E. Palendeng, Australia
1700-1715	Questions & Discussion	Questions & Discussion
FRIDAY 20TH SEPTEMBER 2019		
0820-0840	**Buses depart GCCEC for Dreamworld**	
0900-1030	**Bush tucker breakfast amongst Australian bush and animal life at Coroboree**	
1045-1300	**Animal and Wildlife NIR**	
1045-1130	**Keynote:** Kara Youngetob, Australia	
1130-1145	Rapid estimation of fish age from otoliths analyzed by Fourier transform near infrared spectroscopy #7558 T.E. Helser, USA	
1145-1200	Near-infrared spectroscopy applied to identify the main intermediate hosts of schistosomiasis in Brazil #7831 C.C. Mello-Silva, Brazil	

1200-1215	Reproductive status discrimination of endangered Amur leopard females by fecal near infrared reflectance spectroscopy *#7622* C.K. Vance, USA
1215-1230	Breeding goats for juniper (*Juniperus* sp.) consumption using fecal NIR determinations for phenotypic data *#7636* J.W. Walker, USA
1230-1245	*In vitro* assessment of bovine herpesvirus (BoHV-1) infection as a first step to developing a rapid screening tool for Bovine Respiratory Disease (BRD) using near infrared (NIR) spectroscopy and aquaphotomics *#7475* M. Santos-Rivera, USA
1245-1300	Worms, poo and NIR: characterising blood in sheep faeces as a measure of *Haemonchus contortus* infection. *#7611* Elise Kho, Australia
1300-1315	Closing Ceremony
1315	**Packed Lunch Takeaway**
1345	Buses depart for BNE, OOL and GCCEC

Program subject to change without notice.