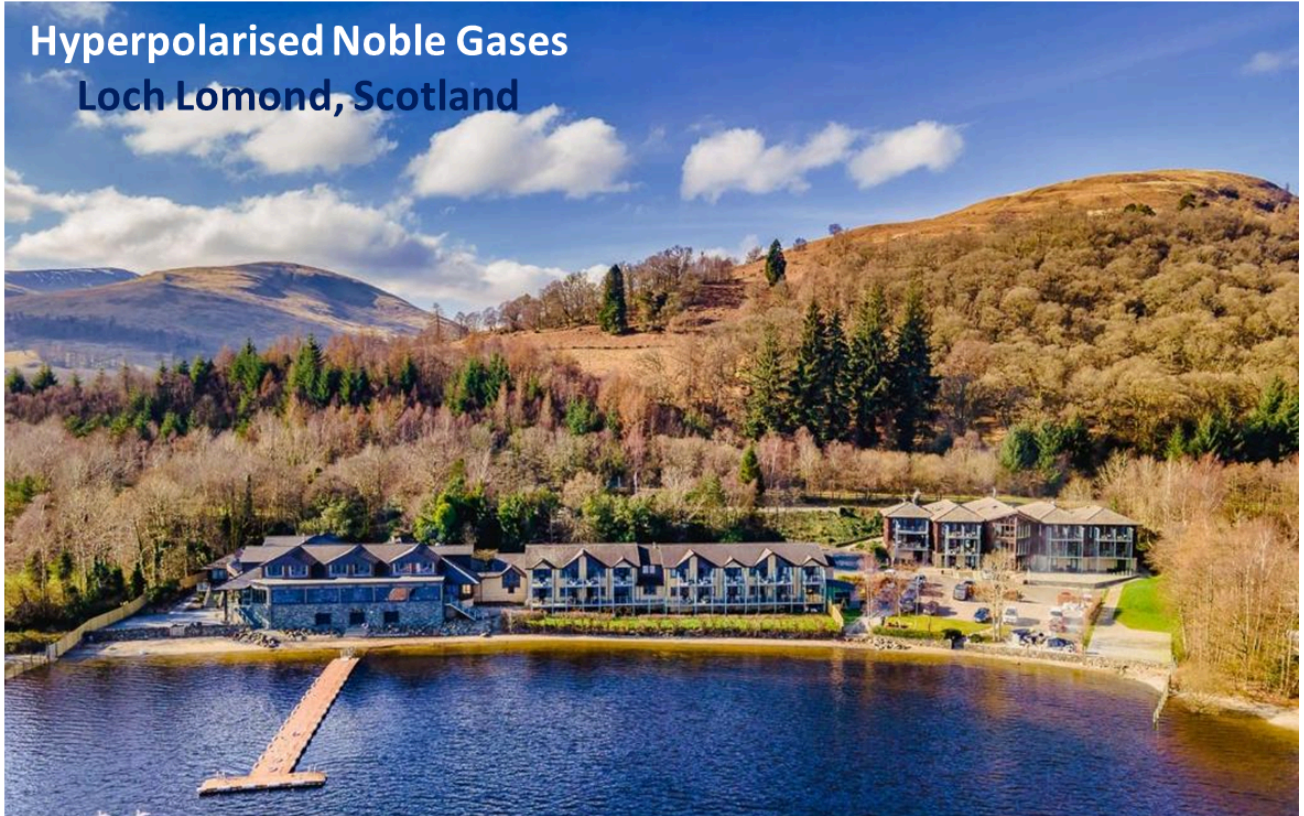


19<sup>th</sup>-24<sup>th</sup> April 2026

**Hyperpolarised Noble Gases**  
**Loch Lomond, Scotland**



**Programme**

**PiNG 2026**

**---PROGRAMME---**

## **SUNDAY, APRIL 19<sup>th</sup> – EVENING**

- 15:00 – 19:00 ARRIVAL - WELCOME and REGISTRATION
- 19:30-20:30 DINNER (provided in the Colquhoun's Restaurant)

## **MONDAY, APRIL 20<sup>th</sup> – MORNING**

- 7.30 – 8.30 BREAKFAST
- 8:50 – 9.00 WELCOME
- 9.00 – 9:40 SESSION A: **MEOP METHODS 1** (McMillan Suite)
- CONTRIBUTED ORAL PRESENTATIONS
- 9:00 – 9.20 **A1.** Simulation and Experimental Verification of the 3He RF Plasma Discharge at the CSNS – Matthew Musgrave
- 9.20 – 9.40 **A2.** Polarization-analysed SANS at the ESS – Annika Stellhorn
- 9:45 – 10:30 COFFEE BREAK
- 10:30 – 10.50 SESSION B: **MEOP METHODS 2** (McMillan Suite)
- CONTRIBUTED ORAL PRESENTATIONS
- 10:30 – 10:50: **B1.** Compact MEOP-based 3He gas polarisers – Pierre-Jean Nacher
- 11:45 – 13:15 LUNCH (provided in the Colquhoun's Restaurant)

## **MONDAY, APRIL 20<sup>th</sup> – AFTERNOON**

- 13:15 – 14:00 SESSION C: **NEUTRON PHYSICS TUTORIAL** (McMillan Suite)
- Steven Parnell
- 14:00 – 14:15 BREAK
- 14:15 – 16:05 SESSION D: **NEUTRON PHYSICS METHODS** (McMillan Suite)
- CONTRIBUTED ORAL PRESENTATIONS

14:15 – 14:35	<b>D1.</b> Development of polarized $^3\text{He}$ neutron spin filters at Oak Ridge National Laboratory – Chenyang Jiang
14:35 – 14:55	<b>D2.</b> A High-Magnetic-Field Polarized $^3\text{He}$ Target for Nuclear Physics Scattering Experiments – James Maxwell
14:55 – 15:15	<b>D3.</b> JCNS $^3\text{He}$ polarization for Science with Neutrons – Earl Babcock
15:15 – 15:35	<b>D4.</b> Development of a novel Adiabatic Fast Passage polarized $^3\text{He}$ spin flipper – David Jullien
	INVITED ORAL PRESENTATIONS
15:35 – 16:05	<b>D5.</b> Production of Spin-Polarized Deuterium Beams by Charge Transfer with High Density Raman-Pumped Cs Vapor –Thad Walker (VIRTUAL)
16:05 – 16:30	COFFEE BREAK
16:30 – 18:00	SESSION E: <b>EDM AND SYMMETRY TESTS/EXOTICA</b> (McMillan Suite)
	INVITED ORAL PRESENTATIONS
16:30 – 17:00	<b>E1.</b> Towards alkali-free hyperpolarization of xenon via direct ultraviolet excitation – Gil Porat
	CONTRIBUTED ORAL PRESENTATIONS
17:00 – 17:20	<b>E2.</b> Hyperpolarized Xenon as a Quantum Sensor for Dark Matter: The CASPER experiment – Arian Dogan
17:20 – 17:40	<b>E3.</b> Dark matter searches with noble gas nuclear spins – William Terrano (VIRTUAL)
17:40 – 18:00	<b>E4.</b> Fermi-contact interaction manipulation in a Rb-K- $^3\text{He}$ – Daniel Gavilan-Martin

## **MONDAY, APRIL 20<sup>th</sup> – EVENING**

19.00 – 19.30	WELCOME (Lounge Bar)
19.30-20.30	DINNER (provided in the Colquhoun’s Restaurant)

## **TUESDAY, APRIL 21<sup>st</sup> – MORNING**

7.30 – 8.30	BREAKFAST
9.00 – 9:45	SESSION F: <b>SEOP PHYSICS TUTORIAL</b> (McMillan Suite)
	Brian Saam

9:45 – 10:30	COFFEE BREAK
10:30 – 11:50	SESSION G: <b>SEOP METHODS I</b> (McMillan Suite)
	INVITED ORAL PRESENTATIONS
10:30 – 11:00	<b>G1.</b> Efficiency limits of Continuous-flow SEOP – James Ball
11:00 – 11:30	<b>G2.</b> Recent Developments and Applications of Stopped-Flow Production of Hyperpolarized Gases – Boyd Goodson
	CONTRIBUTED ORAL PRESENTATIONS
11:30 – 11:50	<b>G3.</b> Spin-Exchange Collisions in SEOP: A Multiscale Simulation – Juha Vaara
11:50 – 14:00	LUNCH (provided in the Colquhoun's Restaurant)

## **TUESDAY, APRIL 21<sup>st</sup> – AFTERNOON**

14:00 – 14:40	SESSION H: <b>SEOP METHODS II</b> (McMillan Suite)
	CONTRIBUTED ORAL PRESENTATIONS
14:00 – 14:20	<b>H1.</b> Alkali Metal Number Density Measurement via Faraday Rotation at Low Magnetic Field – Eleanor Terry-Welsh
14:20 – 14:40	<b>H2.</b> Searching for X-Factor Relaxation in <sup>129</sup> Xe-Rb SEOP – Chelsea Weaver
14:40 – 15:30	BREAK
15:30 – 17:30	POSTER SESSION (Glen Lomond Suite)

## **TUESDAY, APRIL 21<sup>st</sup> – EVENING**

19:30 – 20:30	DINNER (provided in the Colquhoun's Restaurant)
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## WEDNESDAY, APRIL 22<sup>nd</sup> – MORNING

7.30 – 8.30 BREAKFAST

9.00 – 9:45 SESSION I: **MAGNETOMETRY TUTORIAL** (McMillan Suite)

Mark Limes

9:45 – 10:30 COFFEE BREAK

10:30-11:40 SESSION J: **MAGNETOMETRY METHODS** (McMillan Suite)

INVITED ORAL PRESENTATIONS

10:30 – 11:00 **J1.** title Daniel Gavilan

CONTRIBUTED ORAL PRESENTATIONS

11:00 – 11:20 **J2.** Absolute ultra-low magnetic field measurements using hyperpolarized <sup>3</sup>He – Wiebke Pohlandt.

11:20 – 11:40 **J3.** Magnetometry with <sup>3</sup>He: from fundamental physics to metrology – Timothy Chupp (VIRTUAL)

11:45 – 13:15 LUNCH (provided in the Colquhoun's Restaurant)

## WEDNESDAY, APRIL 22<sup>nd</sup> – AFTERNOON

Free for exploring the surrounding area.

## WEDNESDAY, APRIL 22<sup>nd</sup> – EVENING

19:30 – 20.30 DINNER (provided in the Colquhoun's Restaurant)

## THURSDAY, APRIL 23<sup>rd</sup> – MORNING

- 7.30 – 8.30 BREAKFAST
- 9:00 – 9:45 SESSION K: **HYPERPOLARISED MRI TUTORIAL** (McMillan Suite)
- Jim Wild
- 9:45 – 10:30 COFFEE BREAK
- 10:30 – 11:40 SESSION L: **HYPERPOLARISED LUNG MRI** (McMillan Suite)
- INVITED ORAL PRESENTATIONS
- 10:30 – 11:00 **L1.** Paediatric applications of Xe MRI – Jason Woods
- CONTRIBUTED ORAL PRESENTATIONS
- 11:00 – 11:20 **L2.** Feasibility of Dissolved-Phase Hyperpolarised <sup>129</sup>Xe MRI at 0.5 T – Ben Wilson
- 11:20 – 11:40 **L3.** **title** Guilhem Collier
- 11:45 – 13:45 LUNCH (provided in the Colquhoun's Restaurant)

## THURSDAY, APRIL 23<sup>rd</sup> – AFTERNOON

- 13:45 – 14:55 SESSION M: **HYPERPOLARISED MRI: BEYOND THE LUNGS** (McMillan Suite)
- INVITED ORAL PRESENTATIONS
- 13:45 – 14:15 **M1.** Opportunities for Hyperpolarized <sup>129</sup>Xe at High and Low Magnetic Field Strengths – Rosa Branca
- CONTRIBUTED ORAL PRESENTATIONS
- 14:15 – 14:35 **M2.** Label-free Antibody Biosensing by Hyperpolarized <sup>129</sup>Xe – Lorenz Mitschang
- 14:35 – 14:55 **M3.** Detecting Hydrated Free Gadolinium Ions via <sup>129</sup>Xe HyperCEST Spectroscopy Using Cryptophane-A Acid Derivatives in Competitive Binding Assays – Hannah Gerbeth

14:55 – 15:30 COFFEE BREAK

15:30 – 16:30 FREE DISCUSSIONS

16:30 – 18:00 MEETING TO DISCUSS NEXT PING

## **THURSDAY, APRIL 23<sup>rd</sup> – EVENING**

19:00 – 22:00 DINNER (provided in the Colquhoun's Restaurant)

## **FRIDAY, APRIL 24<sup>th</sup> – MORNING**

7.30 – 8.30 BREAKFAST

9:00 – 10:10 SESSION N: **BIOSENSORS, MATERIALS AND SURFACE PHYSICS**  
(McMillan Suite)

### CONTRIBUTED ORAL PRESENTATIONS

9:00 – 9:20 **N1.** Multiscale modeling of spin relaxation and SPINOE polarization transfer in <sup>129</sup>Xe NMR – Perttu Hilla

9:20 – 9:40 **N2.** Hyperpolarized <sup>129</sup>Xe Studies of Hydrophobic Silica Aerogels and the LCC ICCG Enzyme on a Benchtop NMR Spectrometer – Wolfgang Killian

### INVITED ORAL PRESENTATIONS

09.40 – 10:10 **N4.** From Clinic to Industry: Translating Hyperpolarised Xenon Imaging into Engineering Galina Pavlovskaya

10:10 – 11:00 AM BREAK

11:00 – 12:00 FREE DISCUSSIONS AND CONFERENCE WRAP UP

12:00 – 14:00 CLOSING LUNCH (provided in the Colquhoun's Restaurant)

## Invited speaker biographies

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### **Thad Walker**

Vilas Distinguished Achievement Professor at the University of Wisconsin-Madison. Current research interests: NMR gyros, atomic magnetometry, generating polarization-squeezed light, and high current nuclear-spin-polarized atomic beams.



### **Gil Porat**

Received his BSc and PhD in Electrical and Electronics Engineering from the Tel Aviv University. Currently an Associate Professor of Electrical and Computer Engineering and an Engineering Research Chair in Quantum Photonics at the University of Alberta. Researches laser physics, ultrafast and nonlinear optics, laser-matter interaction and atomic physics, and how to apply these fields to developing novel quantum technologies and exploring fundamental physics. The main thrusts in his lab are the development of room-temperature quantum technology based on nuclear spins in noble gases, standoff quantum sensing of gases, and development of novel frequency comb lasers for quantum sensing and metrology across a wide range of optical frequencies.



### **Jimmy Ball**

After graduating in Physics from the University of Nottingham, he completed a PhD in medical physics at the University of Sheffield, investigating the efficiency limits and optimisation of large-scale hyperpolarised xenon-129 production. He is now a postdoctoral researcher in magnetic resonance physics at the Institute of Psychiatry, Psychology & Neuroscience (IoPPN), King's College London, developing neurofluid MRI methods for research into a broad range of neurological



disorders.

### **Boyd Goodson**

Graduated in chemistry from Princeton University and received his PhD from U.C. Berkeley (in the lab of the late Alex Pines, specializing in hyperpolarized MR). Following a postdoctoral stint at Caltech (in the lab of the late Nobel Laureate Ahmed Zewail, specializing in ultrafast electron diffraction), he joined the faculty at Southern Illinois University Carbondale, where he is now a Distinguished Scholar and Professor in the School of Chemical & Biomolecular Sciences (as well as adjunct faculty in Physics).



He also currently serves as Associate Dean – Research for the College of Agricultural, Life, & Physical Sciences. His research concerns the development and application of hyperpolarization-enhanced NMR and MRI, particularly approaches involving spin-exchange optical pumping and parahydrogen-induced polarization

### **Daniel Gaviland**

### **Jason Woods**

Dr. Jason C. Woods is the Luther Foundation Research Chair and Professor of Pediatrics (Pulmonary Medicine), Radiology, and Biomedical Engineering at the University of Cincinnati and Cincinnati Children's Hospital Medical Center. He is a member of the Fleischner Society, Director of Research in Pulmonary Medicine, Director of the Center for Pulmonary Imaging Research and Co-Director of the Cincinnati Bronchopulmonary Dysplasia Center. Dr Woods received his Ph.D. in physics from Washington University, and after a Fellowship in Radiology and



Pulmonary Medicine, his early career was split between faculty and university administration at Washington University before moving to Cincinnati in 2013. His research career has been focused on translational applications and imaging with hyperpolarized-gas MRI, outcomes improvement, and the long and tortuous path to clinical approval and implementation. His current research involves imaging and modeling of lung ventilation, alveolar structure, and gas exchange with hyperpolarized  $^{129}\text{Xe}$ , with specific application to pediatric lung diseases.

### **Rosa Tamara Branca**

She received a Master of Science in Physics and a PhD in Biophysics from the University of Rome “La Sapienza” (Italy) while working under the joint supervision of Bruno Maraviglia and Warren Warren. She is currently a Professor in the Department of Physics and Astronomy at the University of North Carolina at Chapel Hill. Her current research focuses on magnetic resonance imaging and spectroscopy applications of hyperpolarized  $^{129}\text{Xe}$  at both high and low field strengths, with particular emphasis on the development of advanced instrumentation and the study of nonlinear spin interactions at low field.



### **Galina Pavlovskaya**

Obtained her MSci in Molecular Physics from Lomonosov Moscow State University, Russia and her PhD in Chemical Physics/ Solid State NMR from Clark University, USA. Further training in MRI was in the National High Magnetic Field Laboratory (USA) and Chemical Engineering, University of California, Berkeley and Lawrence Livermore National Laboratory (USA). As an Associate professor at the University of Nottingham,



I lead microimaging research group within Sir Peter Mansfield Imaging Centre, University of Nottingham. The group leads on the development of innovative MRI approaches using hyperpolarised xenon to study in situ flows and reactions in a variety of engineering applications and works across interdisciplinary boundaries with impact in energy, archaeology and clinical MRI with hyperpolarised xenon. The group also works on hyperpolarisation of quadrupolar isotopes of Noble gases.