

**5th International Workshop on Advances in the Molecular Pharmacology and
Therapeutics of Bone Disease
27-30 June 2012**

**St Catherine's College
Oxford, UK**



Final Programme

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Therapeutics of Bone Disease
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General information and plan of the campus

Bookmark and check mobile website for any programme changes during the meeting:

<http://m.oxfordbonepharm.org/>



Advances in the Molecular Pharmacology and Therapeutics of Bone Disease

Scientific Committee

Chairman:

Graham Russell (Oxford, UK)

Co-Chairs:

Cyrus Cooper (Oxford and Southampton, UK)

Peter Croucher (Sydney, Australia)

Jack Martin (Melbourne, Australia)

In association with:

The Botnar Research Centre, University of Oxford

The Mellanby Institute for Bone Research, University of Sheffield

Contact for further information:

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Sponsors and other supporters

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Wednesday 27 June

10:00-18:00 *Registration (Porters' Lodge)*

12:45 Lunch

13:50 WELCOME AND INTRODUCTION
Graham Russell (Oxford and Sheffield, UK)

14:00-15:30 **Advances in bone biology and genetics**

Chairs: Francis Glorieux (Montreal, Canada)/Bente Langdahl (Aarhus, Denmark)

14:00 WHAT'S NEW IN BONE BIOLOGY AND THE IMPACT OF GENETICS
Stuart Ralston (Edinburgh, UK)

14:30 STEM CELLS AND REGENERATIVE MEDICINE: DREAM OR REALITY?
Paolo Bianco (Rome, Italy)

15:00 THE INTERRELATIONSHIP BETWEEN FAT AND BONE
Clifford Rosen (Maine, USA)

15:30 Tea

16:00-17:40 **Advances in skeletal biology and disease**

Chairs: Andrew Carr (Oxford, UK)/Peter Croucher (Sydney, Australia)

16:00 REGULATORY PATHWAYS IN OSTEOCYTES
Joanna Price (Bristol, UK)

16:30 SCLEROSTIN BIOLOGY AND ANABOLIC STRATEGIES
Michaela Kneissel (Basle, Switzerland)

17:00 TENDON AS A THERAPEUTIC TARGET
Philippa Hulley (Oxford, UK)

17:20 NOVEL TARGETS AND MYELOMA BONE DISEASE
Claire Edwards (Oxford, UK)

17:40 Close

19:00-20:15 **Dinner (St Catherine's College)**

Thursday 28 June

08:00-17:00 *Registration (Bernard Sunley Building)*

08:45-10:15 **Regulatory pathways in bone formation and resorption**

Chairs: Tim Arnett (London, UK)/Jonathan Reeve (Cambridge, UK)

08:45 NEW MEDIATORS OF PTH ANABOLIC EFFECTS
Serge Ferrari (Geneva, Switzerland)

09:15 EPHRIN SIGNALLING WITHIN THE OSTEOBLAST LINEAGE AND PTH ACTION
Natalie Sims (Melbourne, Australia)

09:45 REGULATION OF HOMEOSTASIS BY RAMPS AND THEIR POTENTIAL AS DRUG TARGETS
Tim Skerry (Sheffield, UK)

10:15 Coffee and Posters

11:15-12:45 **Therapeutics based on receptor biology**

Chairs: Serge Ferrari (Geneva, Switzerland)/Tim Skerry (Sheffield, UK)

11:15 (MIS)ADVENTURES IN DRUG DISCOVERY
Lorraine Fitzpatrick (GSK)

11:45 SELECTIVE RECEPTOR MODULATION: VITAMIN D AND GLUCOCORTICOID
Henry Bryant (Eli Lilly)

12:15 SELECTIVE RECEPTOR MODULATION: RETINOIC ACID AND ANDROGENS
Gary Krishnan (Eli Lilly)

12:45 Lunch

14:00-15:00 **ECTS/Amgen Fellows Presentations**

Chairs: Miep Helfrich (Aberdeen, UK)/Bente Langdahl (Aarhus, Denmark)

14:00 A COMBINED FC-OPG/HPATH(1-34) THERAPY TO RESTORE IMPAIRED SKELETAL GROWTH AND BONE LOSS IN A MOUSE MODEL OF IL-6 DEPENDENT JUVENILE INFLAMMATORY DISEASES
Andrea Del Fattore (L'Aquila, Italy)

14:15 IKK INHIBITORS: RATIONALE, MECHANISMS OF ACTION, AND IMPLICATIONS FOR THE TREATMENT OF BONE DISEASE
Aymen Idris (Edinburgh, UK)

14:30 SELECTIVE GLUCOCORTICOID RECEPTOR MODULATION MAINTAINS BONE MINERAL DENSITY IN MICE
Martina Rauner (Dresden, Germany)

14:45 PERIOSTIN DEFICIENCY INCREASES CORTICAL MICROCRACKS AND REDUCES WOVEN BONE FORMATION IN MICE SUBJECTED TO FATIGUE LOADING
Nicolas Bonnet (Geneva, Switzerland)

14:50 EFFECTS OF POLYMORPHISMS ON TNFRSF11B GENE FUNCTION: IMPLICATIONS FOR BONE DISEASES
Anna Daroszevska (Edinburgh, UK)

14:55 PREVALENCE AND CLINICAL SIGNIFICANCE OF OSTEOPROTEGERIN AUTO-ANTIBODIES
Philip Riches (Edinburgh, UK)

15:00-15:20 **Science, medicine and society 1**

Chairs: Jack Martin (Melbourne, Australia)/Graham Russell (Oxford and Sheffield, UK)

15:00 THE CHARITIES SECTOR AND THE ROLE OF ARTHRITIS RESEARCH UK (ARUK)
Alan Silman (Medical Director, ARUK)

15:20-16:00 Tea and Attended Posters

16:00-16:30 **Pathogenic pathways and other therapeutic opportunities**

Chairs: Roger Smith (Oxford, UK)/Michael Whyte (St Louis, USA)

16:00 LESSONS FROM OCHRONOSIS
Jim Gallagher (Liverpool, UK)/**Alan Boyde** (London)

16:30-17:30 **Science, medicine and society 2**

Chairs: Jack Martin (Melbourne, Australia)/Graham Russell (Oxford and Sheffield, UK)

16:30 REDUCING THE IMPACT OF HIP FRACTURES IN REAL LIFE
Keith Willett (National Clinical Director for Trauma Care, UK)

16:50 MANAGING SCIENCE AND INNOVATING IN CHALLENGING TIMES; A VIEW FROM NIH
Joan McGowan (Director of the Division of Musculoskeletal Diseases at the National Institute of Arthritis and Musculoskeletal and Skin Diseases, Bethesda, USA)

17:10 A VIEW FROM THE LEGAL WORLD
Ranjit Dhindsa (Attorney, Washington, USA)

17:30-18:15 **Keynote Lecture**

Chairs: Hal Ebetino (Cincinnati, USA)/Graham Russell (Oxford and Sheffield, UK)

THE SHOCKING HISTORY OF PHOSPHORUS
John Emsley (Chemist, Author and Broadcaster)

18:15 Close

19:00-20:15 **Dinner (St Catherine's College)**

20:30 **Historic Oxford – Walking Tour (meet at Porters' Lodge)**

Friday 29 June

08:00-17:00 *Registration (Bernard Sunley Building)*

08:30-08:45 **Musculoskeletal research in Oxford: Past, Present and Future**

Chairs: Afsie Sabokbar (Oxford, UK)/James Triffitt (Oxford, UK)

08:30 MUSCULOSKELETAL RESEARCH IN OXFORD
Andrew Carr (Oxford, UK)

08:45-10:20 **The impact of structural biology on drug discovery: Science and the Structural Genomics Consortium**

Chairs: Afsie Sabokbar (Oxford, UK)/James Triffitt (Oxford, UK)

08:45 INTRODUCTION TO THE STRUCTURAL GENOMICS CONSORTIUM: PAST, PRESENT AND FUTURE
Chas Bountra (Oxford, UK)

09:05 UNRAVELLING THE HUMAN KINOME: USING CHEMICAL PROBES FOR IDENTIFYING NEW DRUG TARGETS
Stefan Knapp (Oxford, UK)

09:30 THE ROLE OF THE BMP/TGFBETA FAMILY IN FIBRODYSPLASIA OSSIFICANS PROGRESSIVA
Alex Bullock (Oxford, UK)

09:55 EPIGENETIC APPROACHES TO BONE AND MUSCULOSKELETAL PHYSIOLOGY AND DISEASE
Udo Oppermann (Oxford, UK)

10:20 Coffee

10:50-11:20 **Update on Paget's Disease**

Chairs: Kenneth Lyles (Durham, USA)/ Ian Reid (Auckland, New Zealand)

10:50 UPDATE ON PAGET'S DISEASE
David Roodman (Pittsburgh, USA)

11:20-12:40 **New approaches to treating bone diseases**

Chairs: Tim Arnett (London, UK)/Caje Moniz (London, UK)

11:20 BONE ANABOLICS IN MYELOMA BONE DISEASE
Andy Chantry (Sheffield, UK)

11:40 PURINERGIC SIGNALLING IN BONE
Alison Gartland (Sheffield, UK)

12:00 EVALUATION OF THE THERAPEUTIC POTENTIAL OF A NOVEL CNP ANALOGUE FOR ACHONDROPLASIA
Florence Lorget (BioMarin, Novato, USA)

12:20 NEW DIRECTIONS IN THE BIO-ORGANIC CHEMISTRY OF BPs
Marie Migaud (Belfast, UK)

12:40 Lunch

14:00-15:30 Emerging treatments for bone diseases

Chairs: Richard Eastell (Sheffield, UK)/Uri Liberman (Tel Aviv, Israel)

14:00 ENZYME REPLACEMENT IN BONE DISEASE BECOMES A REALITY/THERAPEUTIC ADVANCES IN THE TREATMENT OF INHERITED DISORDERS OF BONE

Michael Whyte (St Louis, USA)

14:30 CATHEPSIN K INHIBITION AS A THERAPEUTIC STRATEGY

Le Thi Duong (Merck)

15:00 NITRIC OXIDE AND BONE

Sophie Jamal (Toronto, Canada)

15:30 Tea

16:00-18:00 Arthritis, calcification disorders and cancer

Chairs: Sophie Jamal (Toronto, Canada)/Kassim Javaid (Oxford, UK)

16:00 ADVANCES IN THERAPIES FOR INFLAMMATORY ARTHRITIS

Peter Taylor (Oxford, UK)

16:30 ADVANCES IN THERAPIES FOR OSTEOARTHRITIS AND THE ROLE OF STRONTIUM RANELATE

Cyrus Cooper (Oxford and Southampton, UK)

Chairs: Cyrus Cooper (Oxford, UK)/Peter Croucher (Sydney, Australia)

17:00 REGULATORY PATHWAYS IN VASCULAR CALCIFICATION AND POSSIBLE INTERVENTION STRATEGIES

Lorenz Hofbauer (Dresden, Germany)

17:30 THERAPEUTICS IN BONE ONCOLOGY: CURRENT STATUS AND FUTURE DIRECTIONS

Robert Coleman (Sheffield, UK)

18:00 Close

19:30-22:30 Reception and Workshop Dinner (St Catherine's College)

Saturday 30 June

08:30-17:00 *Registration (Bernard Sunley Building)*

08:35-16:45 **Bisphosphonates: Update and future prospects**

08:35 INTRODUCTION

Hal Ebetino (Cincinnati, USA)/**Graham Russell** (Oxford and Sheffield, UK)

Chairs: Hal Ebetino (Cincinnati, USA)/Graham Russell (Oxford and Sheffield, UK)

08:45 CLINICAL INTRODUCTION AND PERSPECTIVES

Paul Miller (Colorado, USA)

09:05 UPDATE ON ZOLEDRONATE, AND ITS EXTENDED ACTIONS

Ian Reid (Auckland, New Zealand)

09:25 BPs AND LIFE SPAN

Kenneth Lyles (Durham, USA)

09:50 CELLULAR AGEING: AUTOPHAGY AND OTHER AGEING MECHANISMS

Katja Simon (Oxford)

10:20 Coffee

Chairs: Nick Athanasou (Oxford, UK)/Rajesh Thakker (Oxford, UK)

10:45 ANTI-APOPTOTIC EFFECTS OF BPs; CONNEXINS, ERK, AND OSTEOCYTES

Lilian Plotkin (Indianapolis, USA)

11:15 OSTEOCYTES IN HIPS

Jonathan Reeve (Cambridge, UK)

11:35 LINKING AGEING MECHANISMS AND BONE LOSS

James Edwards (Oxford, UK)

11:55 CELLULAR UPTAKE AND DISTRIBUTION WITHIN BONE

Fraser Coxon (Aberdeen, UK)

12:15 NEW CHEMICAL PROBES FOR BISPHOSPHONATE INTERACTIONS WITH BONE

Charles McKenna (Los Angeles, USA)

12:35 Lunch

Chairs: Claus Glüer (Kiel, Germany)/Nuria Guañabens (Barcelona, Spain)

14:00 CLINICAL STUDIES OF DISTRIBUTION AND REGIONAL EFFECTS OF BPs IN MAN

Ignac Fogelman (London, UK)

14:20 MEASURING CLINICAL RESPONSES USING BIOMARKERS

Richard Eastell (Sheffield, UK)

14:40 EFFECTS OF BPs ON OSTEOCLAST DIFFERENTIATION

Guillaume Mabileau (Angers, France)

- 14:55 THE IMPORTANCE OF GAMMA-DELTA T CELLS
Keith Thompson (Aberdeen, UK)
- 15:10 Tea
- Chairs: Uri Liberman (Tel Aviv, Israel)/David Roodman (Pittsburgh, USA)
- 15:30 ASSESSING MINERAL AFFINITY OF BPs
Xuchen (Aimee) Duan (Oxford, UK)
- 15:45 STUDIES ON FPPS AND GGPPS AND MUTANTS
James Dunford (Oxford, UK)
- 16:00 BONE LOSS AND EFFECTS OF BPs AFTER BURNS
Gordon Klein (Galveston, USA)
- 16:15 NEW DIRECTIONS WITH BPs AND GASTROINTESTINAL ACTIONS
Michael Pazianas (Oxford, UK)
- 16:35 Closing remarks
- 16:45 Close and end of Workshop
- 19:30-22:00 Reception and Dinner: St Peter's College**

POSTERS (PhD Students)

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THE ROLE OF CONNEXIN 43-MEDIATED GAP JUNCTIONAL INTERCELLULAR COMMUNICATION IN THE SKELETAL RESPONSE TO MECHANICAL UNLOADING

Shane Lloyd (Pennsylvania, USA)

P02

N-CADHERIN MODULATION OF BONE ANABOLIC RESPONSES VIA WNT AND PARATHYROID HORMONE SIGNALING

Leila Revollo (St Louis, USA)

P03

THE ROLE OF E PROTEINS IN OSTEOCLAST DIFFERENTIATION AND SURVIVAL

Courtney Long (Oklahoma, USA)

P04

THROMBOSPONDIN-1 REGULATES BONE DENSITY BY REGULATING OSTEOCLAST-OSTEOBLAST COUPLING

Sarah Amend (St Louis, USA)

P05

IDENTIFICATION, CHARACTERIZATION AND ISOLATION OF A COMMON MONOCYTE PROGENITOR FOR OSTEOCLASTS, MACROPHAGES AND DENDRITIC CELLS FROM MURINE BONE MARROW AND PERIPHERAL TISSUES

Christian Jacome-Galarza (Connecticut, USA)

P06

EFFECTS OF SLOW ACTION DRUGS ON THE CARTILAGE AND SUBCHONDRAL BONE IN A RABBIT MODEL OF OSTEOARTHRITIS

Maria Permuy (Santiago de Compostela, Spain)

P07

OSTEOGENESIS IMPERFECTA - GENOTYPE, PHENOTYPE AND MEDICAL TREATMENT

Jannie Dahl Hald (Aarhus, Denmark)

P08

THE ROLE OF AUTOPHAGY IN THE PATHOGENESIS OF PAGETS DISEASE OF BONE

Eman Azzam (Aberdeen, UK)

P09

THE EFFECT OF ACTIVATING FGFR₃ MUTATIONS ON OSTEOGENIC DIFFERENTIATION AND ECTOPIC BONE FORMATION BY HUMAN PERIOSTEAL DERIVED CELLS

Johanna Bolander (Leuven, Belgium)

P10

AGE-RELATED CHANGES IN GENE EXPRESSION PATTERNS IN BONE FOLLOWING MECHANICAL LOADING

Tobias Thiele (Berlin, Germany)

P11

THE DIMINISHED RESPONSE TO AXIAL LOADING IN AGED FEMALE MICE IS NOT INFLUENCED BY CONCURRENT EXERCISE

Lee Meakin (Bristol, UK)

P12

EFFECTS OF ARTIFICIAL MATRICES ON OSTEOCLASTOGENESIS

Juliane Salbach (Dresden, Germany)

P13

PATHOPHYSIOLOGY OF MALE OSTEOPOROSIS: ROLE OF ANDROGENS AND DISUSE

Michaël Laurent (Leuven, Belgium)

P14

ROLE OF TRAF6 ACTIVITY ON THE DEVELOPMENT AND PROGRESSION OF METASTATIC BONE DISEASE

Pushpabhani Prabha Peramuhendige (Edinburgh, UK)

P15

ROLE OF THYROID HORMONE RECEPTOR ALPHA IN OSTEOARTHRITIS SUSCEPTIBILITY AND PREVENTION

Julian Waung (London, UK)

P16

THE EFFECT OF OBESITY ON BONE STRUCTURE

Amy Evans (Sheffield, UK)

P17

STUDY OF RANKL-MEDIATED PATHOGENIC MECHANISMS IN MOUSE MODELS AND DEVELOPMENT OF NEW THERAPEUTIC APPROACHES

Vagelis Rinotas (Vari, Greece)

ECTS/Amgen Fellows:

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PERIOSTIN DEFICIENCY INCREASES CORTICAL MICROCRACKS AND REDUCES WOVEN BONE FORMATION IN MICE SUBJECTED TO FATIGUE LOADING

Nicolas Bonnet (Geneva, Switzerland)

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EFFECTS OF POLYMORPHISMS ON TNFRSF11B GENE FUNCTION: IMPLICATIONS FOR BONE DISEASES

Anna Daroszevska (Edinburgh, UK)

P20

PREVALENCE AND CLINICAL SIGNIFICANCE OF OSTEOPROTEGERIN AUTO-ANTIBODIES

Philip Riches (Edinburgh, UK)

OTHER POSTERS

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AN AUDIT EXPLORING THE RELATIONSHIP BETWEEN BISPHOSPHONATE THERAPY IN POST-MENOPAUSAL WOMEN WITH OSTEOPOROSIS AND SUB-TROCHANTERIC INSUFFICIENCY FRACTURES

Stephanie Avery (Cardiff, UK)

P22

CIRCULATING MICROPARTICLES IN PAGET'S DISEASE, OSTEOPOROSIS AND BONE TUMORS

Judit Donáth (Budapest, Hungary)

General Information

Accommodation

If you are staying at the University please collect your room key from the Porters' Lodge on your arrival, otherwise please go straight to the registration desk.

Vacating rooms

For those staying on campus, please note that rooms must be vacated after breakfast on the day of your departure.

Luggage storage

Luggage can be stored in the Porters' Lodge.

Contact information – during the conference

In case of emergencies, messages can be left for delegates at the Porters' Lodge on +44 (0)1865 271700. The Porters' Lodge is manned 24 hours a day.

Registration

The registration desk is in the Porters' Lodge on Wednesday and from then on in the Bernard Sunley Building, and is open as follows:

Registration desk: opening times

Wednesday 27 June	10:00-18:00
Thursday 28 June	08:00-17:00
Friday 29 June	08:00-17:00
Saturday 30 June	08:30-16:30

Conference Office

Please visit the Conference Office in Room B, upstairs in the Bernard Sunley Building, if you have any queries during the meeting.

Meals on campus

Dining times at the College are as follows:

Breakfast	07:45-08:30
Lunch:	12:45
Dinner (Weds/Thurs):	19:00
Dinner (Fri)	19:30 for 20:00

The College bar will be open each evening.

Walking Tour

Thursday 28 June, 20:30

Post-dinner walking tour featuring some of Oxford's most historic Colleges and pubs.
Please meet at the Porters' Lodge

Post-Conference Dinner

Saturday 30 June, 19:30

For those able to stay on, there is a Post-Conference Dinner at St Peter's College on the Saturday evening.

Lectures take place in the Bernard Sunley Lecture Theatre and posters, exhibition and tea/coffee breaks will be in the same building.

Car parking

St Catherine's College is one of the few Oxford Colleges to have a car park but please note that it can get extremely busy so spaces cannot be guaranteed. There is no charge for parking but please leave a note on your dashboard to indicate which conference you are attending (Molecular Pharmacology 27-30 June).

Taxis

Telephone numbers for taxis:

ABC Taxis: +44 (0)1865 770077

Radio Taxis: +44 (0)1865 242424

Courtesy Cars: +44 (0)1865 343575

For Heathrow transfers

Courtesy Cars: +44 (0)1865 343575

Hugh Damien: +44 (0)20 8897 0555

Internet access

Internet access is available at the meeting. WiFi is available in most areas of the College, and leads are available from the Porters in case you need one to connect your laptop. You will need a password, which will be available from the registration desk staff.

There is also a computer room for delegates' use (shown on the plan below). You will need to pick up a password from the registration desk in order to use this.

Websites

www.oxfordbonepharm.org

For mobile phones - <http://m.oxfordbonepharm.org/>



