Careers in Academic Medicine
A Personal Experience

Duncan Bassett
Clinical Senior Lecturer
Molecular Endocrinology Group
Imperial College London
The Early Years

Cambridge Pre-clinical

Oxford Clinical

House Officer
Glasgow/Oxford

Recombinant Vaccinia Virus
(Geoff Smith)

Fragile X syndrome
(Kay Davies)

Polycystic Kidney Disease
(Steve Reeders)

Decide if you love or hate the Pipetman life.
A Defining Moment

MEN1

SHO

MEN2
Registrar Endocrinology
Wexham Park & Hammersmith

MRC Training Fellowship
“Positional Cloning of MEN1”
Excellent general training in genetics and molecular biology

SpR Endocrinology
Central Middlesex & Charing Cross
Completion of specialist training (CSST)

Consultant Locum
Hammersmith
Application for MRC Clinician Scientist Fellowship
MRC Clinician Scientist Fellowship
“Thyroid hormone and skeletal development”

- Euthyroid
- Hypothyroid
  - Growth Arrest

- Euthyroid
- Thyrotoxic
  - Accelerated development

Salary for fellow and research assistant
Laboratory start-up funds
Laboratory consumables budget
Money for mice
Thyroid hormone is very important in bone.

- **WT**
- **TRα<sup>0/0</sup>**
- **TRβ<sup>-/-</sup>**

Osteosclerosis

Osteoporosis
Present and Future Studies

Role of TRs
- Global
  - TRα1\(^{-/-}\) and TRα2\(^{-/-}\)
  - TRα1\(^{PV}\), TRβ\(^{PV}\) and TRα1\(^{R384C}\)
- Tissue specific
  - TRα and TRβ deletion
  - D3 over-expression

Role of T3 supply
- Global
  - D1KO, D2KO and D1D2KO
  - Mct8KO

Role of GPCRs
- TSHR
- Hyt/Hyt
- GPB5\(^{-/-}\)
- FSHR
- FSHR\(^{D580Y/D580Y}\)
- Novel orphan receptors
  - LGR4\(^{-/-}\)

Other mouse models
- Osteogenesis imperfecta
- Oim/Oim
- Glucocorticoid induced osteoporosis
- Dusp1\(^{-/-}\)
- Immunity and osteoporosis
- NKT\(^{-/-}\)
Planning Your Scientific Training

- First make sure you enjoy laboratory science
- Get on scientific abstracts or papers
- Identify supervisor/mentors who will support you
- Fellowships/funding that give a complete break from clinical commitments
- Project that will give you the skills to run your own research
- Identify a scientific niche from which you can expand and that is not intensely competitive but is important
Prior to a training fellowship

- Get experience working in a few different labs
- Do a BSc and find out if you really like working in a lab
  Are you a good cook?
  Are you a perfectionist?
  Do you love problem solving?
  Do you thrive on recurrent failure?
  Do you have a depressive personality?
- Get some scientific abstracts or a paper
- Do sufficient clinical training prior to PhD
Identifying a Project

ST1/2
Identify what you are really enthusiastic about

ST3
Get an academic NTN (3/12 each year)
Negotiate ½ a day a week
Identify a supervisor and discuss projects
Get into the lab and do some experiments
Get some preliminary data
Write a review of the field
Be creative and have some ideas
Write a Training Fellowship
Training Fellowships (PhD)

Projects
A research area that is likely to be funded
A subject that you are really interested in
A study that is likely to succeed
Will result in good quality publications
Includes a transferable technical skills

Supervisor
Lab with a track record in obtaining fellowships
Previous fellows are independent scientists
Encourages you into the lab to get preliminary data
Will give you extensive help writing the application
Protection from excessive clinical work
Will support you in the short and long term
Intermediate Fellowships

Project
Need not be directly related to PhD
A research area that is likely to be funded
A research niche that you can expand

Sponsor/supervisor
Excellent working relationship
Will support you in the long term
Protection from clinical/teaching commitments
Complementary to scientific and clinical interests
Problems of Academic Medicine

• Limited funding
• Highly competitive
• Relative insecurity
• Scientific fashion
• Four way pull
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Research, Clinical, Teaching
Why am I an academic physician?

- Experiments and problem solving
- Really understanding what is not understood
- Rapid pace of change
- Freedom to test out new ideas
- Convincing others to let you do more
- The opportunity to be an expert
Occasionally you find what you are looking for
Is the Pipetman life for you

Marmite

Have

Pipetman

Have
Is the Pipetman life for you

HATE

LOVE
Collaborators

**TRα^0/0 and TRβ^{-/-} mice**
Olivier Chassande (Bordeaux)
Jacques Samarut (Lyon)

**TRα^1R^{384C} mice**
Björn Vennström (Karolinska)
Kristina Nordström (Karolinska)

**Hyt/Hyt mice**
Samuel Refetoff (Chicago)
Roy Weiss (Chicago)

**Deiodinase activities**
Theo Visser (Rotterdam)
Monique Kester (Rotterdam)

**TRα^{PV} and TRβ^{PV} mice**
Sheue-yann Cheng (NIH)

**Pax8^{-/-} mice**
Frédéric Flamant (Lyon)
Jacques Samarut (Lyon)

**D2KO and D1/D2KO**
Valerie Galton (Dartmouth)
Donald St. Germain (Dartmouth)

**TSH action**
Gilbert Vassart (Brussels)
Sabine Costagliola (Brussels)

**BSE SEM**
Alan Boyde (QMUL, London)
Peter Howell (UCL, London)