



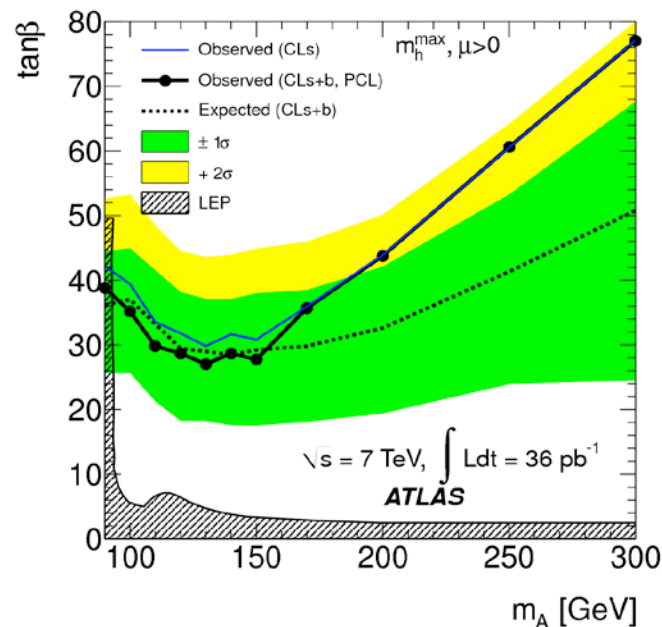
# STFC Fellowship

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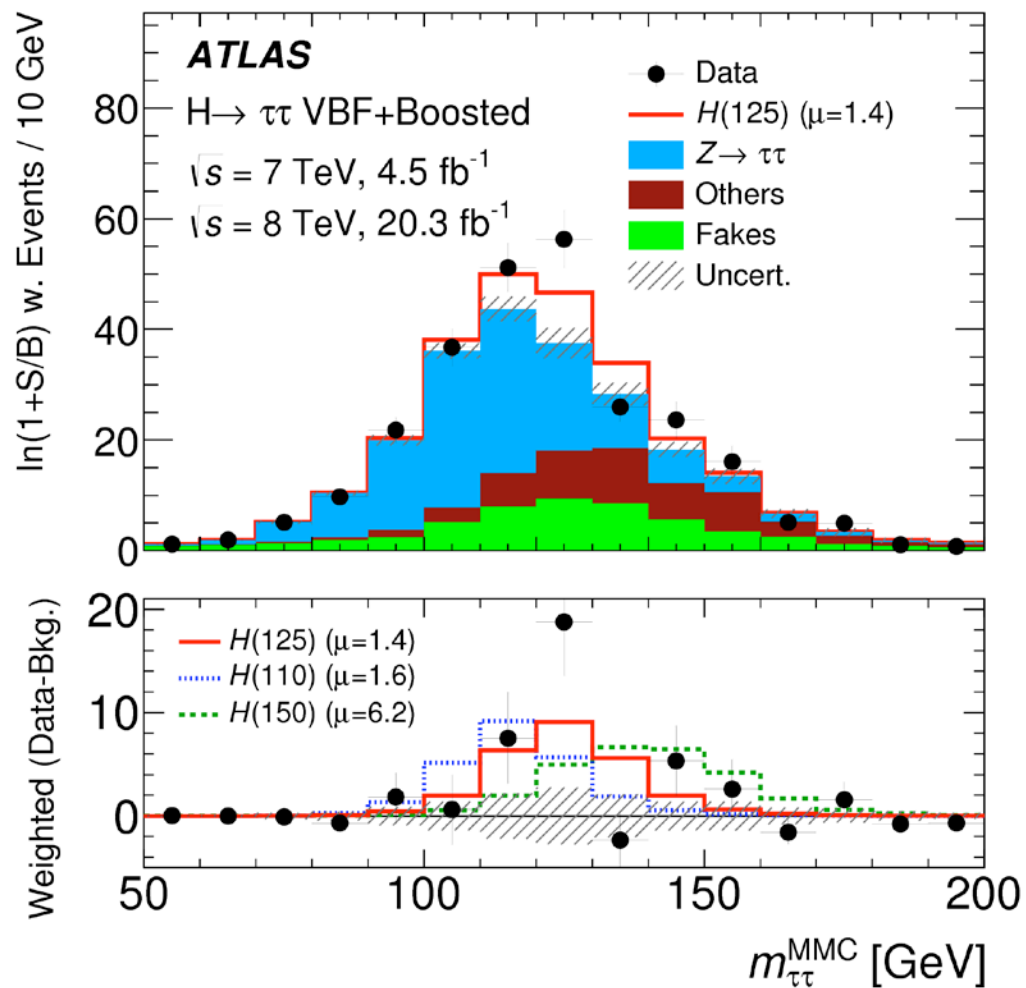
# What I do (did)

- STFC Advanced Fellow 2007-2012
  - Oxford 2007-2011; Warwick 2011-2012 (and still there now, as Reader)
- Higgs Search at the Large Hadron Collider
  - Proposed Higgs to tau tau decay; Higgs to bb decay
  - Lesson 1: don't be afraid to change scope
- Search yielded:



# Continuation of Higgs research

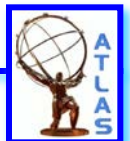
- In 2013 we found evidence for Higgs to tau tau decay



# Brief Biography

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- During fellowship:
  - PhD students; papers, talks at international conferences, PhD vivas, sat on postdoc appointment panel, college tutorial teaching
  - Work done: CDF rare b decay searches, Beyond Standard Model and SM Higgs to tau tau search; observation of Z to tau tau (benchmarking), tau trigger commissioning
  - Set up research group
- Since fellowship:
  - PhD students supervised, postdocs, fellows supervised, papers published, international talks, funding awarded, lecturing, supervising undergrad projects, IOP/STFC committees
  - Higgs search (found!), Higgs property measurement (CP)
  - Muon/tau trigger developments, supervised trigger menu work, upgrade (Inner Tracker) work towards construction



# Topics

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- Topics I've been asked to cover:
  - Importance of colleagues and mentors
  - Lecturing (which I will broaden to teaching)
  - Things you wish you'd known
  - Skills gained that helped most during your fellowship
  - Setting up a research group
  - Other opportunities
- I've drawn on my own experience and informally polled some other Particle Physics fellows so you get a broader perspective

# Summary

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- Be your own person – a fellowship is a chance to take charge of your research agenda (if you haven't already)
- Seek to build a research effort, not just you
  - PhD students / undergraduate project students
  - Collaborate with other fellows/academics but make sure you have an identity of your own
- Make use of the fact you do not have the same constraints as an academic
  - No expectation to teach (a lot); less expectation to bring in funding
  - Therefore make your time count for more – spend more time at the research facility, more time at workshops/running workshops etc
- Look to the next stage
  - If you are at an institution where you are likely to get a permanent job, look to convert it sooner rather than later
  - If you are not, use your time wisely and look for job openings

# Colleagues and Mentors

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- Make use of “annual reviews”
- Contact other STFC fellows in your institute (also those who are working elsewhere now)
- Colleague/Mentor difference

# Teaching

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- There is a limit to how much teaching you are allowed to do within your fellowship contract
  - Respect that limit
- Fellowship is a time to get some experience teaching if you haven't yet, very useful for the next stage
  - Talk to the head of teaching in your department directly if you would like to do some
  - Oxford/Cambridge college alternative
  - Take teaching seriously, commit to what you know you can do
- Academic job interviews usually involve a teaching exercise e.g.
  - teach the Coriolis force
  - critique an undergraduate course syllabus



# Things you wish you'd known

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- (Some of these sourced from past fellows)
- Work with students/postdocs and supervise them sooner – i.e. take on an academic role sooner
- Get teaching experience
- More details on when to spend the budget (e.g. cannot spend in the last six months)
- Details on funding opportunities, parliamentary placements
- Strong desire for networking events like this one to be held annually for all fellowship holders
  - (Scope to do this with policy makers / eminent scientists / Science Board?) c.f. Royal Society events for fellows

# Skills gained that helped most

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- Independence
- Supervising

# Setting up a research group

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- What are the science goals?
- Build consensus that setting up a new group is the right direction for your RO
- Explore what funding opportunities there will be
  - Start-up funds?
  - Research councils
  - Wider world
- What do you want the identity of the group to be?
  - What are your particular skills (USP...)
- How will you ensure longevity of the group?
- What sort of group ethos?

# Other opportunities

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- Outreach
- Policy
- Organise workshops (e.g. IOP half day meeting)

# Final Remarks

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- Most important – it's unlikely you'll have such an unconstrained phase of your career again
- Make the most of it by doing the things that you can't do when more constrained
  - Publish as prolifically as you can
- Look at which “constraints” you like – is it supervision, teaching, directing a research group
  - And make sure the next phase will maximise those aspects