



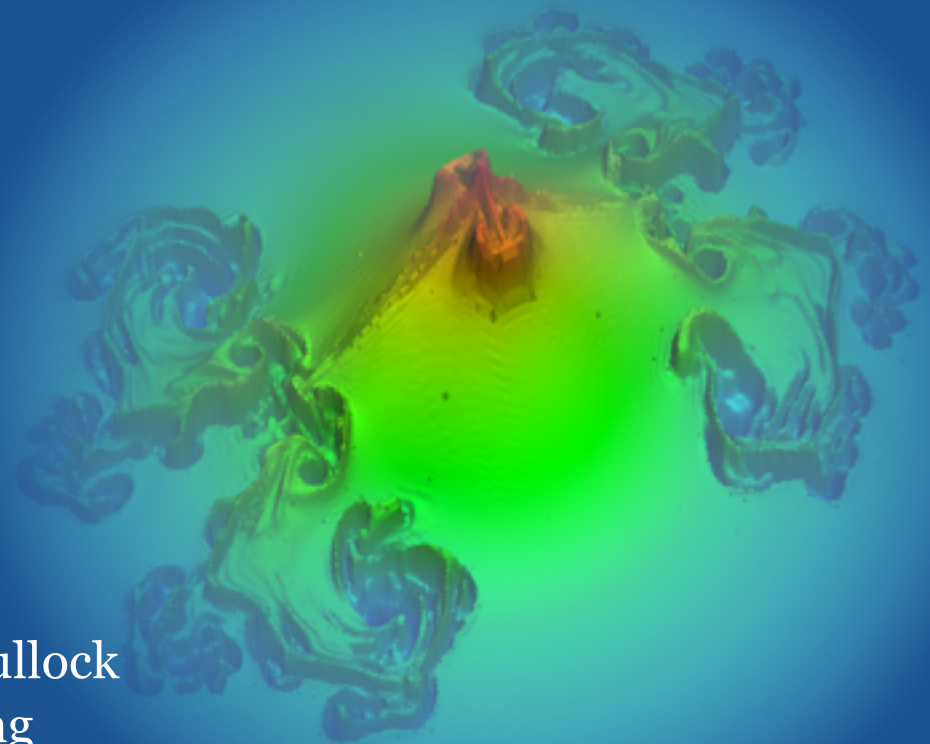
CDT in Next Generation  
Computational Modelling

**EPSRC**

Engineering and Physical Sciences  
Research Council

UNIVERSITY OF  
**Southampton**

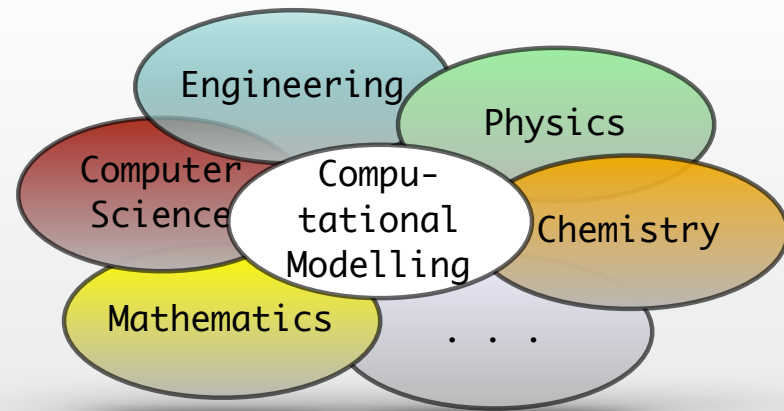
# CDT in Next Generation Computational Modelling



Hans Fangohr, Ian Hawke, Seth Bullock  
EPSRC Centre for Doctoral Training  
21 May 2014

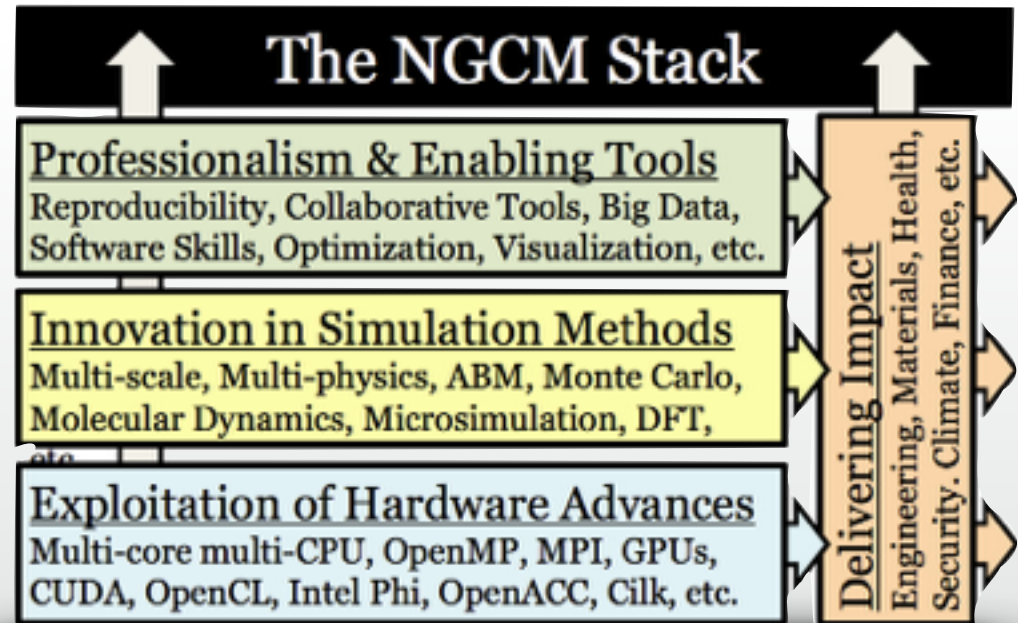
# CDT in Next Generation Computational Modelling (NGCM) – why?

- Computer simulation underpins research and development in science and engineering in academia and industry, for example:
  - Understanding measurements
  - Predicting measurements and performance
  - Improving materials, designs, devices, treatment, policies.
  - Cutting R&D costs.



# CDT in Next Generation Computational Modelling (NGCM) – what?

- Training and research addressing
  - professionalism
  - simulation methods
  - exploitation of latest hardware

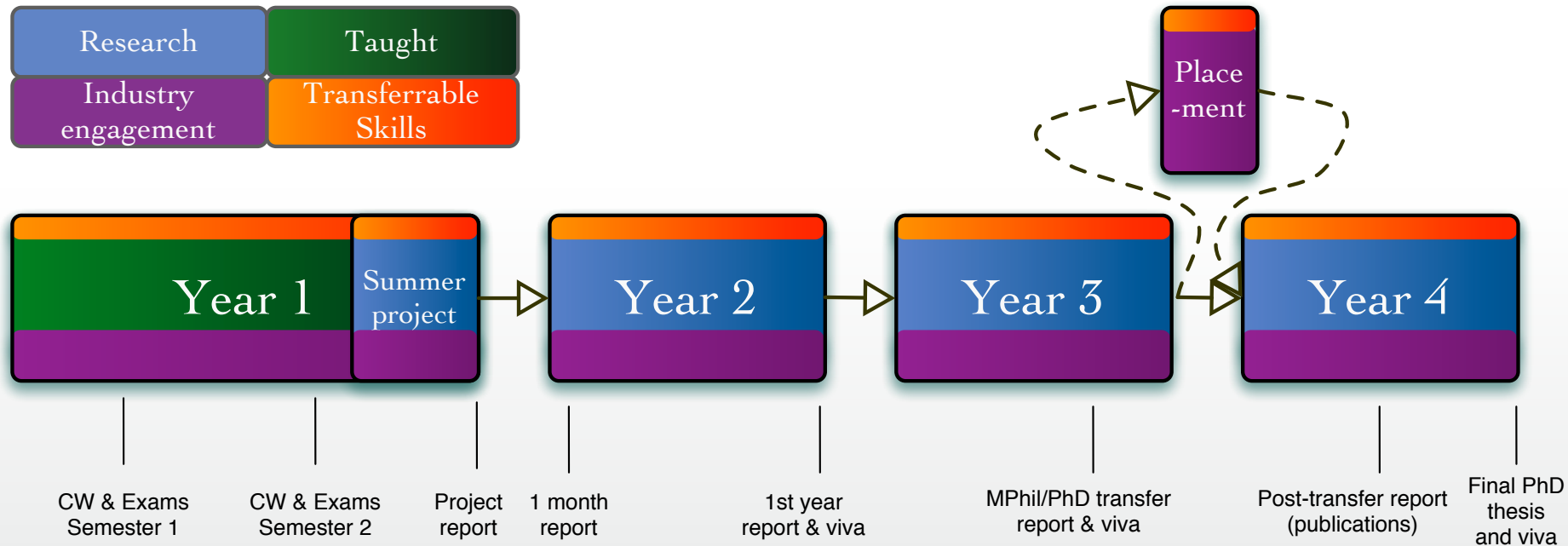


# Next Generation Computational Modelling CDT

- Funded by the Engineering and Physical Science Research Council (EPSRC), with contributions from industry and University of Southampton, total ~ £10 million
- 15 studentships for UK/EU students to start every year (from 2014 to 2018)
- Open for new partners

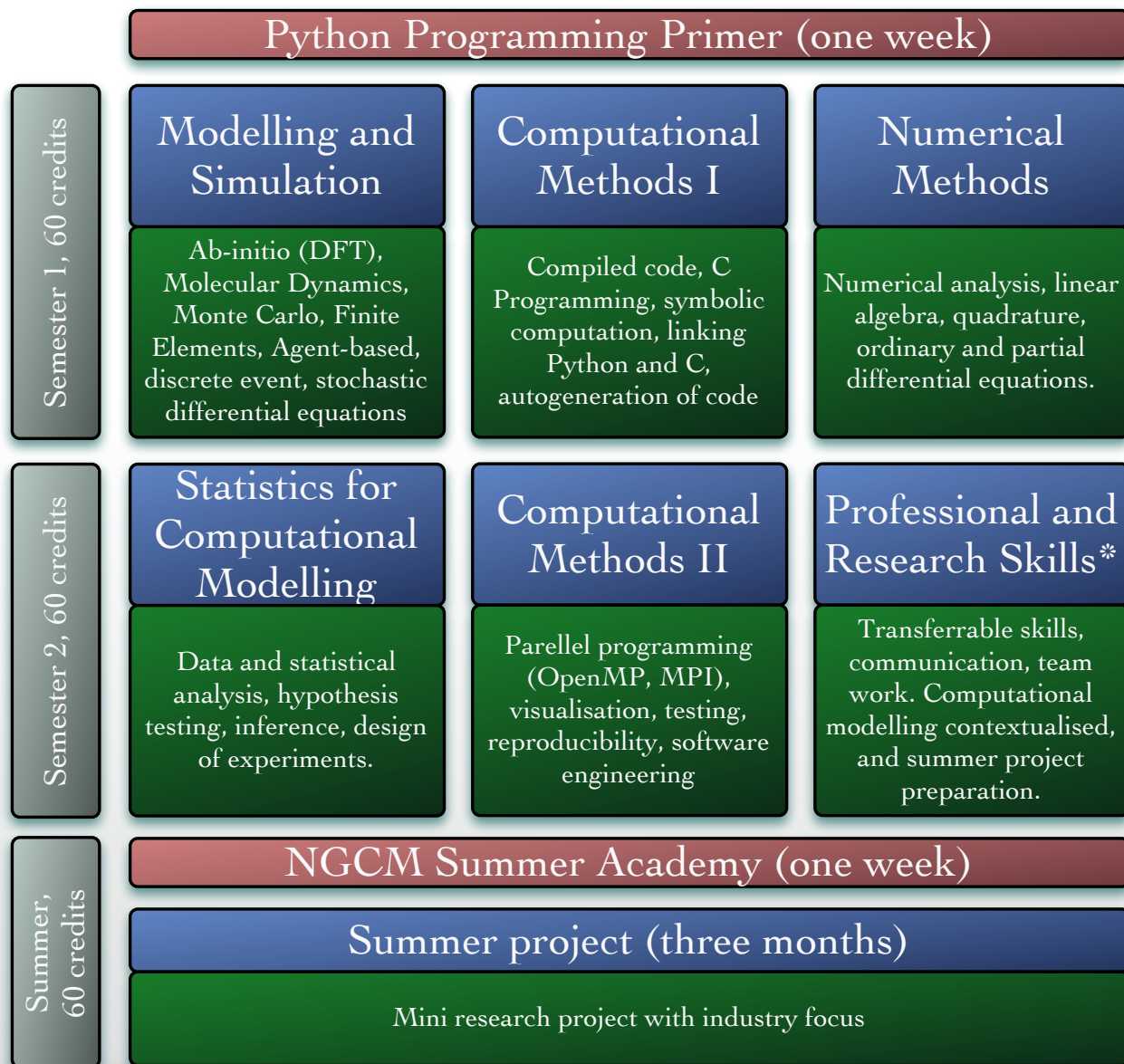


# 4-year programme, overview



# First year training programme

- 6 compulsory modules (90 credits)
- 2 optional modules (30 credits)
- Summer project (60 credits)
- Required pass mark for funding at end of year 1: 60%, 65% in summer project

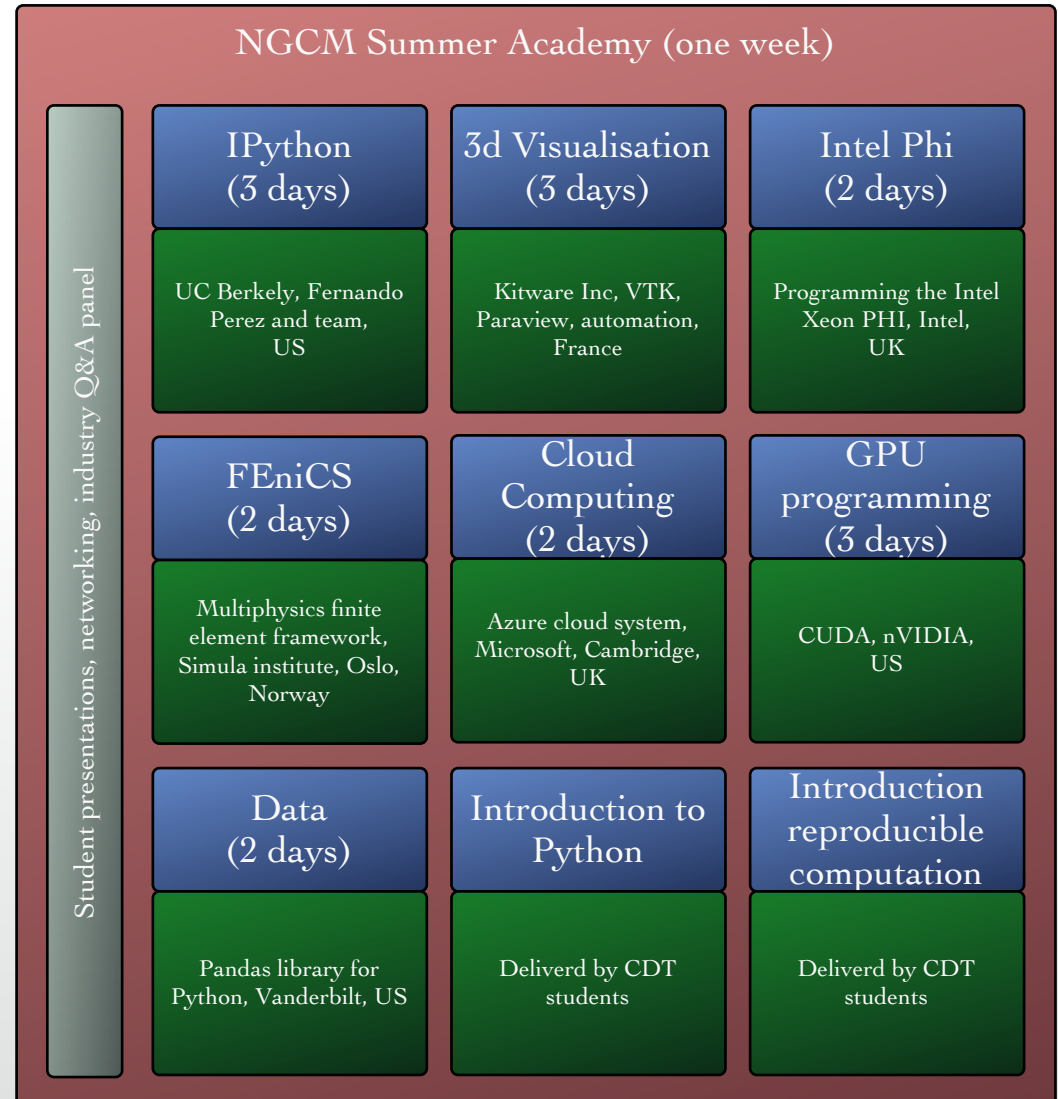






# Summer Academy

- Annual meeting from summer 2015 onwards
- Open for participation from outside Southampton
- Parallel training sessions (examples on the right)
- High profile international trainers
- Centre of gravity for computational modelling in the UK





# Computational facilities:

- Iridis 4
- Emerald (GPUs)
- Access to ARCHER (Advanced Research Computing High End Resource)

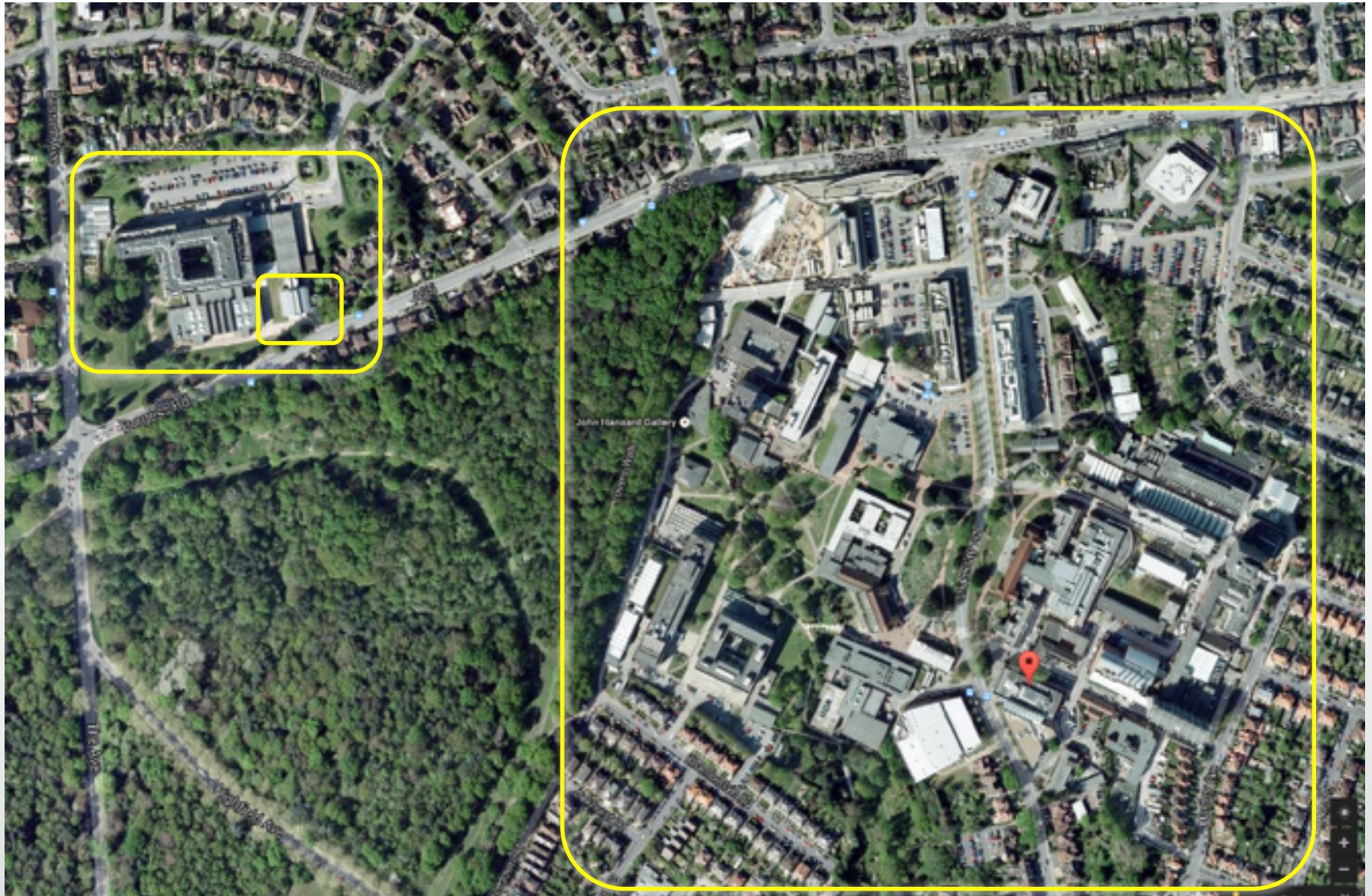




# CDT located on newly developed Boldrewood campus complex

- £116m investment
- Campus Completion in Summer 2014
- Hosting all computational engineering
- Dedicated space for NGCM CDT students





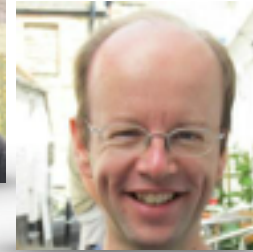




# CDT Core staff

- Directors:

- Hans Fangohr
- Ian Hawke
- Seth Bullock



- Tutors

- Andras Sobester
- Ondrej Hovorka
- Dave Angland

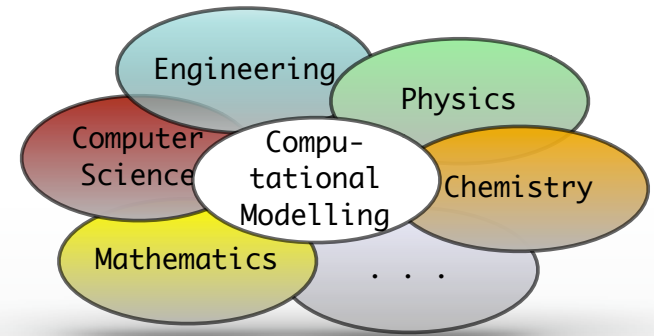


- Manager (to be recruited)

- Supervisors from Computational Modelling Group

# Supervisors from Computational Modelling Group

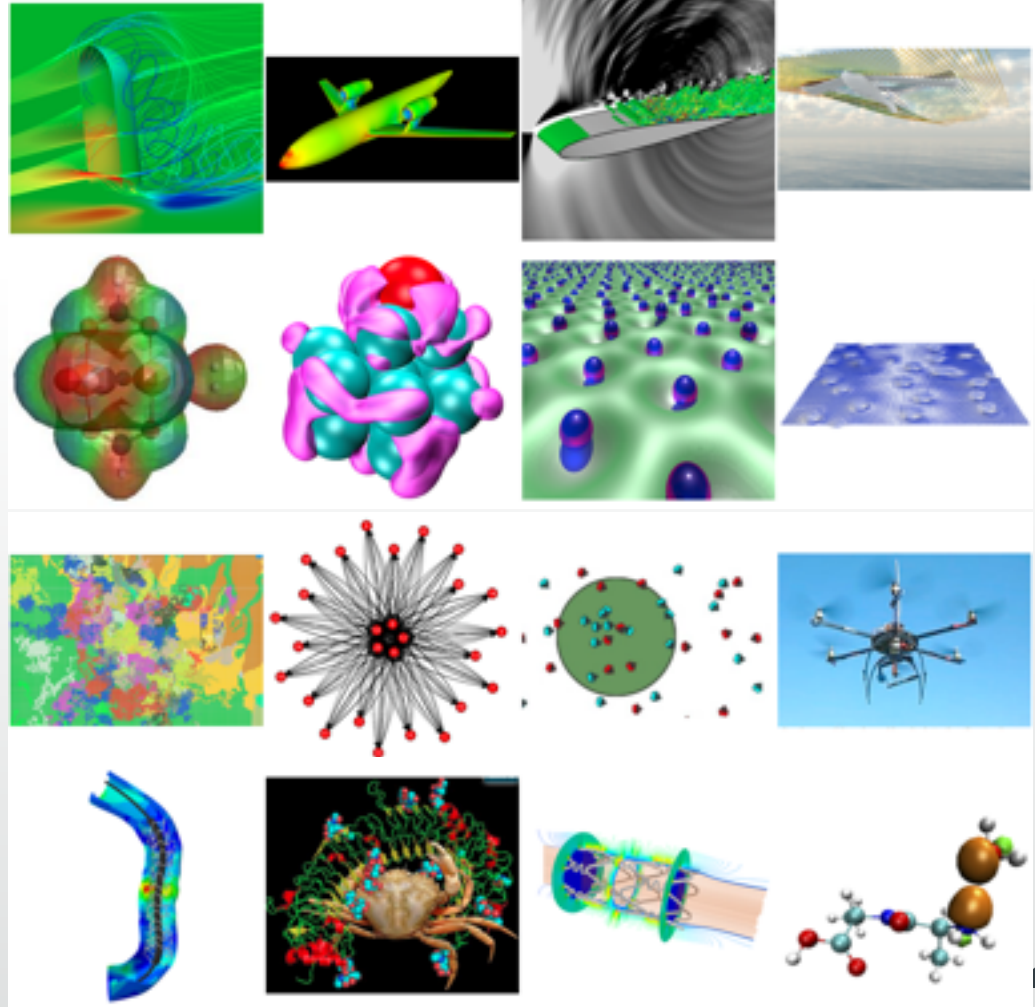
- > 170 academic staff
- > 600 post-docs and PhD
- use computer simulation to advance research and engineering
- joint seminars, training, research
- interdisciplinary networking
- Details: <http://cmg.soton.ac.uk>





# NGCM Research focus areas

- Computational Engineering
- Advanced Materials
- Autonomous Systems
- Biomedicine and Healthcare







# PhD projects

- will have novelty in computational method
- will have novelty in application of method
- Growing list of available projects at <http://ngcm.soton.ac.uk/projects>



# Links ICSS DTC and NGCM CDT

- Joint seminars (Fernando Perez, Lorena Barba 4 June)
- More methods talks (Python, GPUs, Julia, Testing, ...) both is seminars and regularly taught modules
- Summer academy:
  - ICSS students welcome to attend
  - ICSS students welcome to teach
- Test and Rest initiative
- . . .



CDT in Next Generation  
Computational Modelling

# Contact

- Email: [ngcm@soton.ac.uk](mailto:ngcm@soton.ac.uk)
- Website: <http://ngcm.soton.ac.uk>
- Twitter: @ngcm\_soton
- Phone: 023 8059 4888

UNIVERSITY OF  
Southampton

## Develop the future of simulation. Next Generation Computational Modelling

- high performance computing
- state-of-the-art simulation methods
- writing research codes
- robust software engineering
- applications with impact

Join us at the EPSRC Centre for Doctoral Training  
in Next Generation Computational Modelling

Contact: [ngcm@soton.ac.uk](mailto:ngcm@soton.ac.uk)

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