



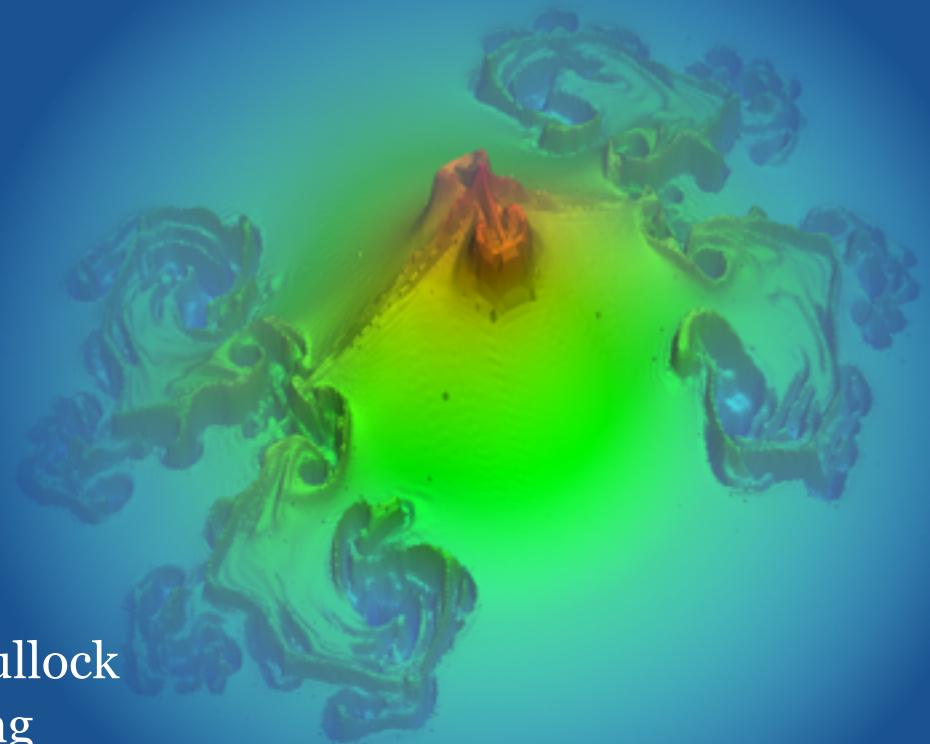
CDT in Next Generation
Computational Modelling

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
20 May 2014

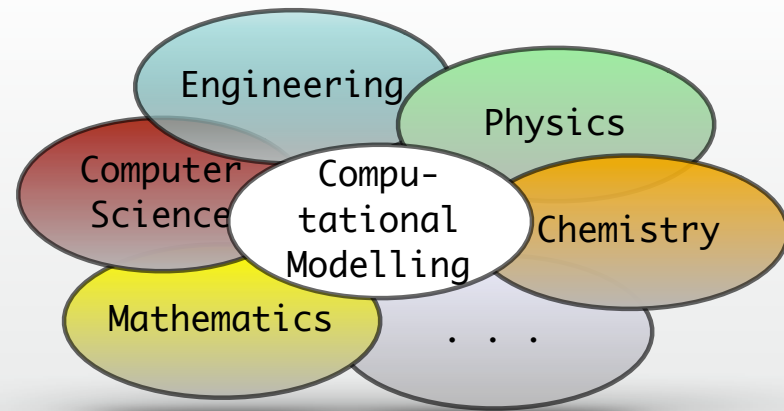


Centre for Doctoral Training (CDT)

- New(-ish) initiative of UK research councils to improve doctoral training
- Training in cohorts of 10 – 20 students per year
- Usually
 - first year dominated by taught modules (similar to MSc), followed by
 - full-time research in years two to four
- Typically leading to PhD degree at the end of 4 years

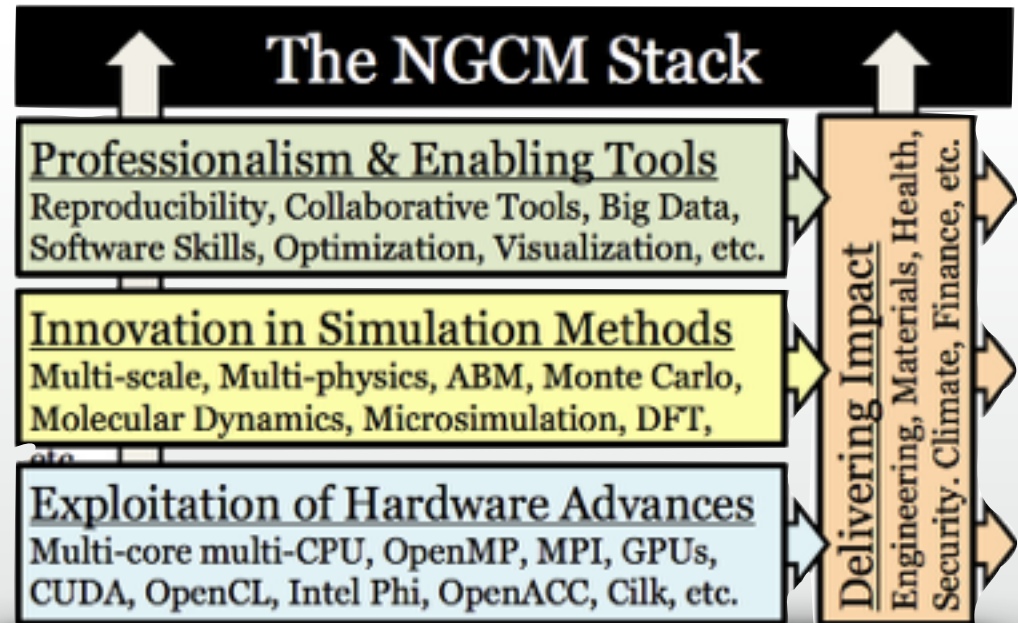
CDT in Next Generation Computational Modelling (NGCM) – why?

- 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

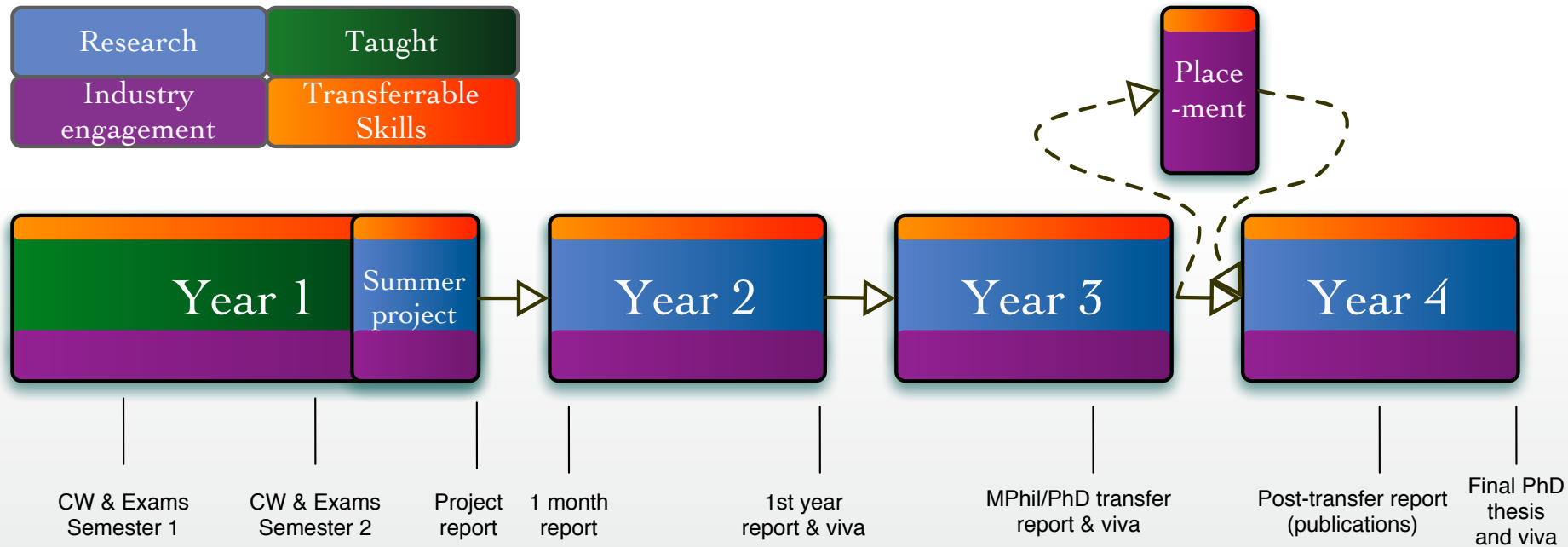


Next Generation Computational Modelling CDT

- 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

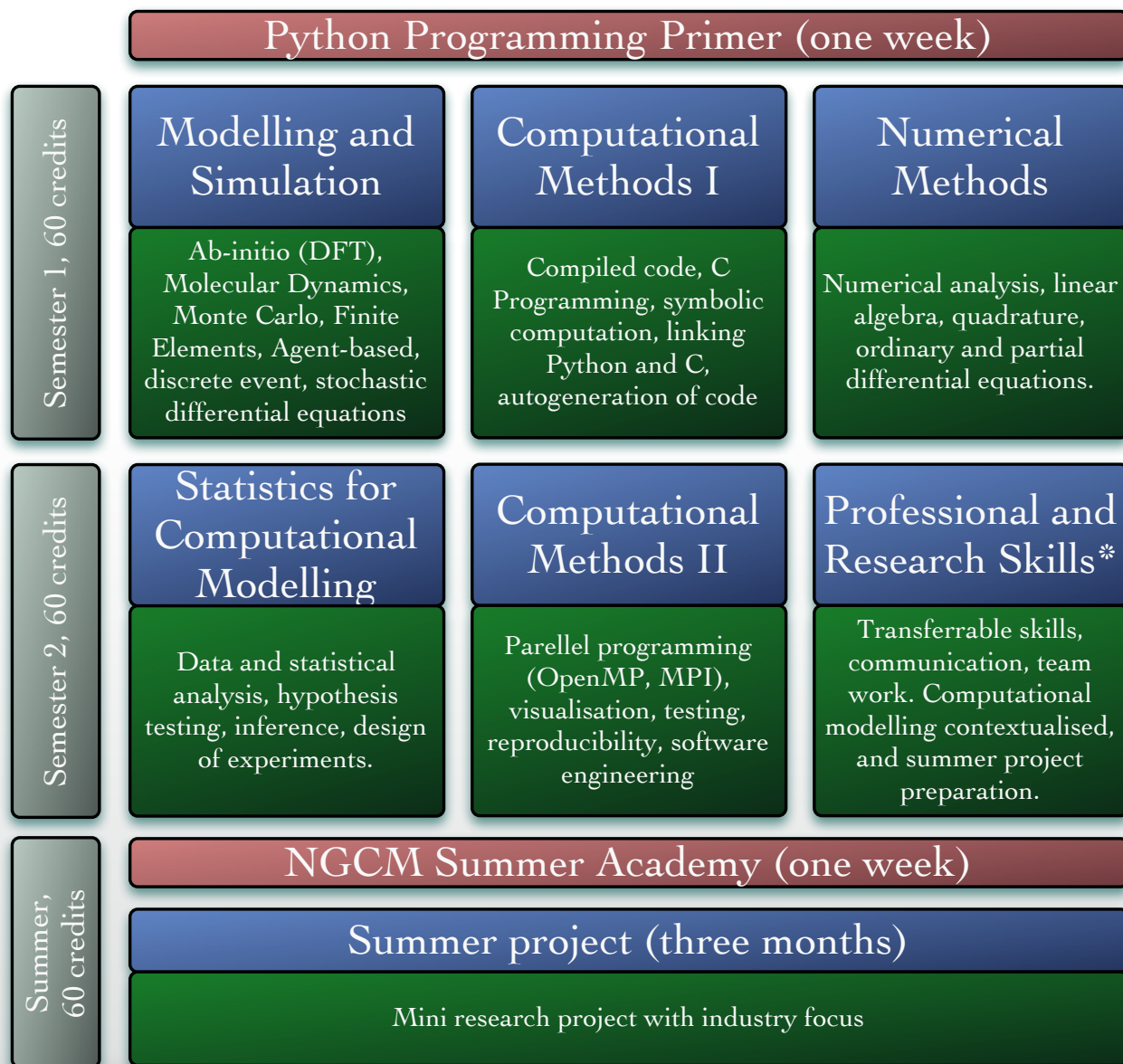


4-year programme, overview



First year training programme

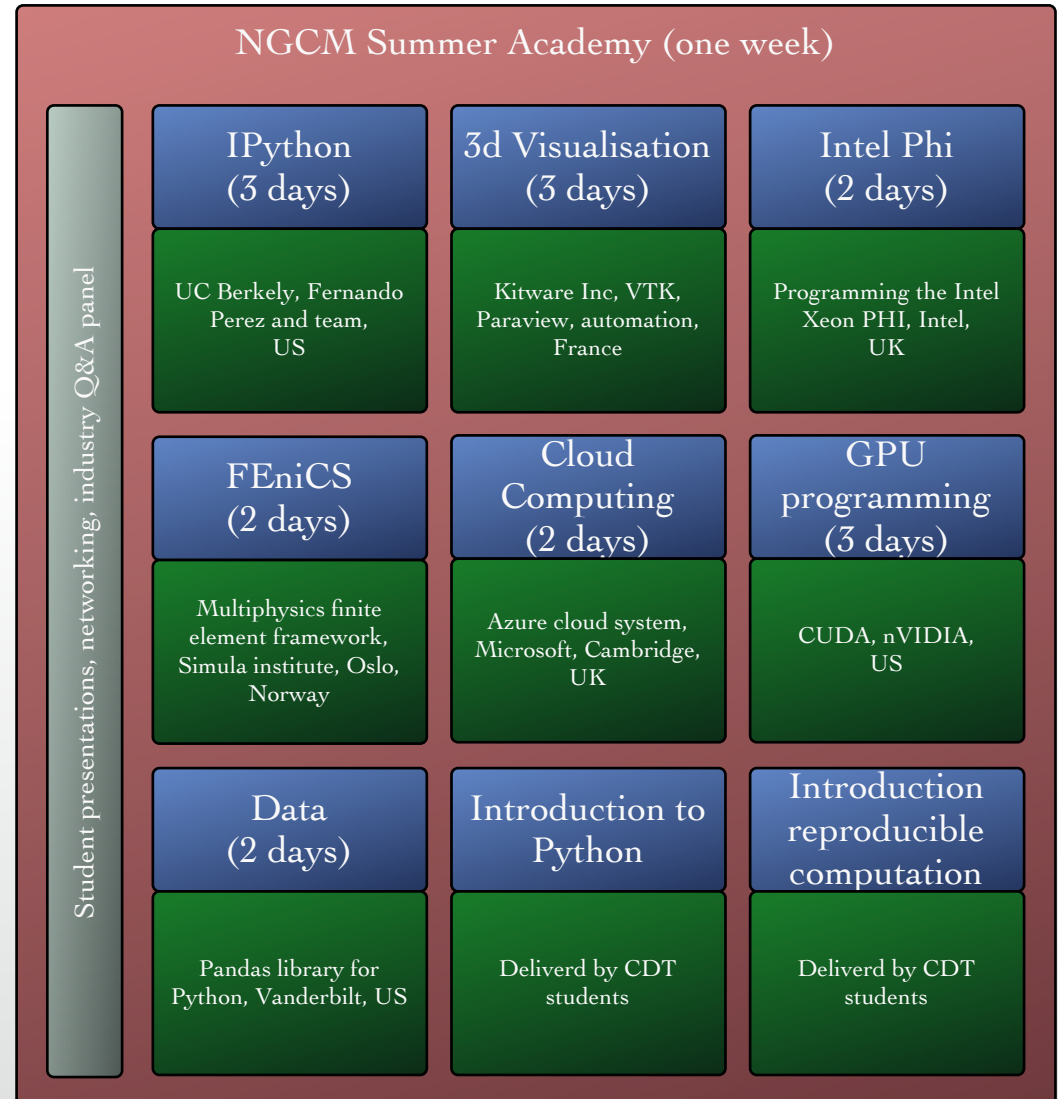
- 6 compulsory modules (90 credits)
- 2 optional modules (30 credits)
- Summer project (60 credits)
- Required pass mark for funding at end of year 1: 60%, 65% in summer project





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:

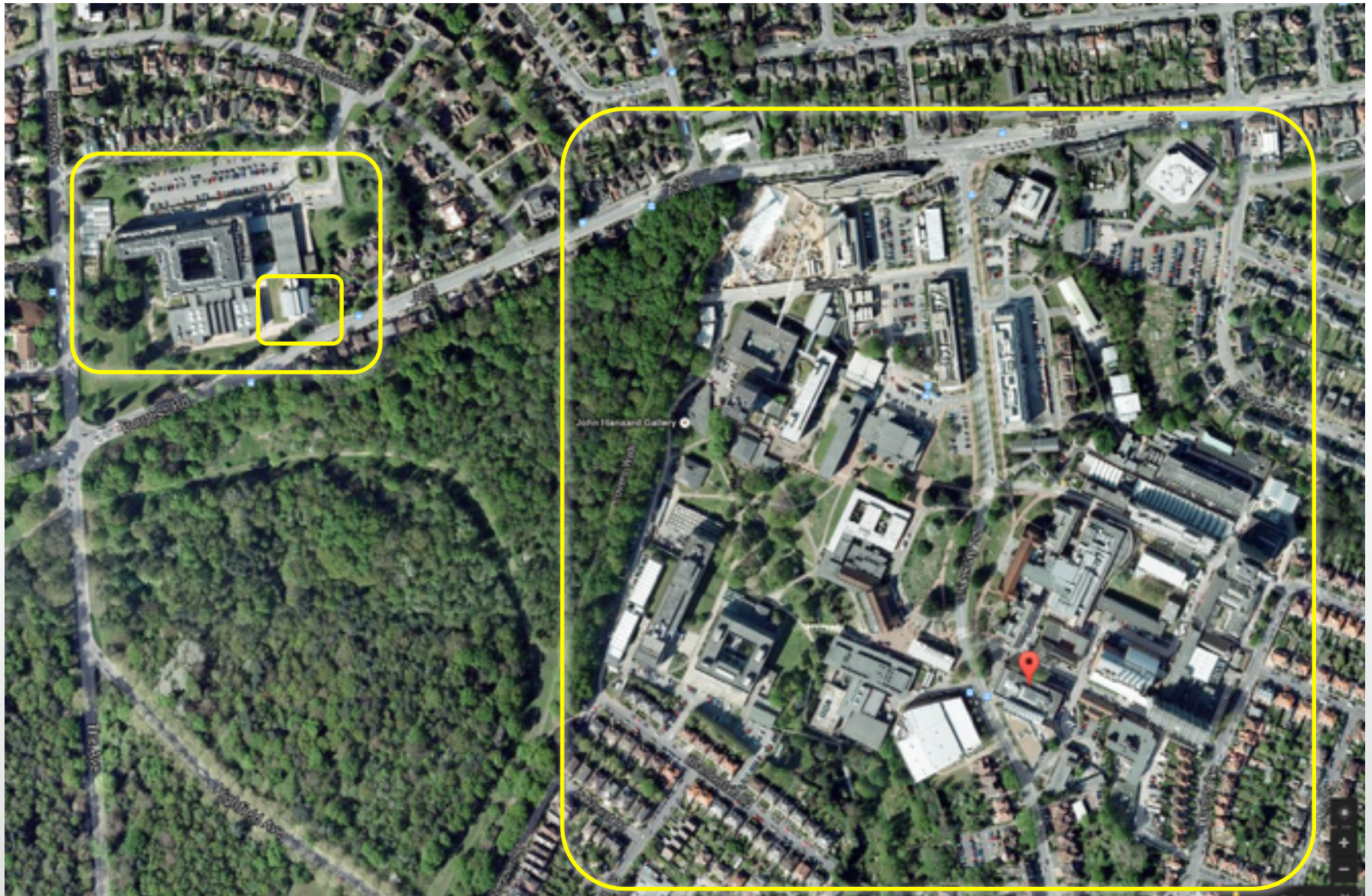
- Iridis 4
- Emerald (GPUs)
- Access to ARCHER (Advanced Research Computing High End Resource)



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



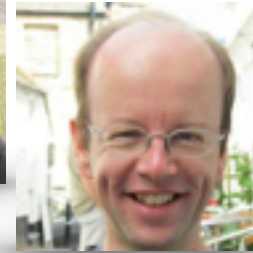




CDT Core staff

- Directors:

- Hans Fangohr
- Ian Hawke
- Seth Bullock



- Tutors

- Andras Sobester
- Ondrej Hovorka
- Dave Angland

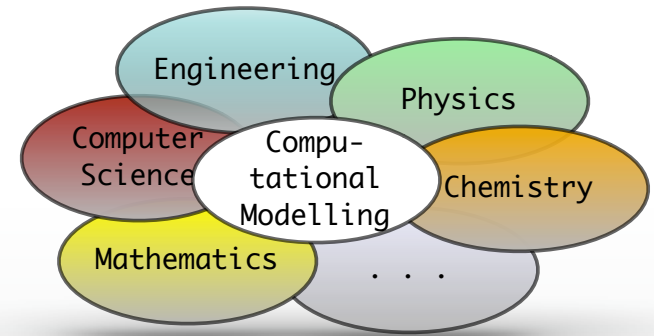


- Manager (to be recruited)

- Supervisors from Computational Modelling Group

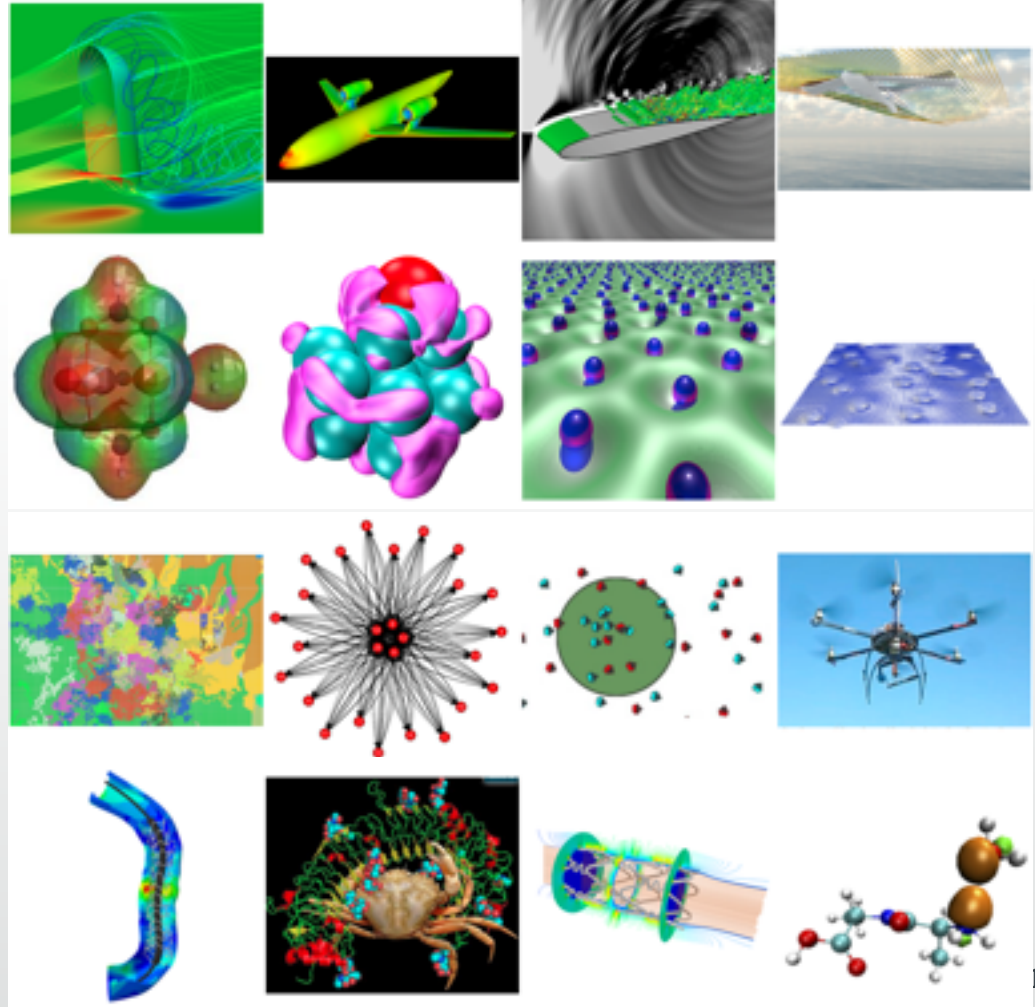
Supervisors from Computational Modelling Group

- > 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>
- Expect normally 1st class degree from student applicants

Recruitment process without industry funds

- Academic proposed project (complete outline form)
- CDT approves project to be in EPSRC remit
- CDT advertises projects and drives recruitment for project
see <http://www.ngcm.soton.ac.uk/projects/index.html>
- Shortlisted student applicants matched with available projects
- All shortlisted applicants will be interviewed
- Studentship and studies will start Sept 2014

Recruitment process with industry funds

- Match academic supervisor from Southampton with industry sponsor, and outline project
- CDT approves project
- CDT advertises projects and drives recruitment for project
- Involve sponsor in recruitment process (if desired)



Co-funding of studentships

- Require industry contributions of (at least) £12.5k per annum over 4 years for one co-funded studentship (50% leverage provided from CDT)
- 8 of these co-funded studentships available every year
- Students engage with sponsor throughout the 4 years: familiarise with problem in semester 1 and 2, summer research project at end of year 1, then 3 years full time research on project. Placements encouraged.



How to engage?

- Propose PhD projects
- Encourage potential PhD applicants to apply via ngcm.soton.ac.uk
- Explore industry interest to co-fund projects
- Participate in seminars, workshops, summer academy, . . .



CDT in Next Generation
Computational Modelling

Contact

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- 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

www.ngcm.soton.ac.uk

