



UCD Facilities

ERC Starting Grants 2012

Institutional Facilities	Facilities within UCD's Major Research Programmes, Centres and Institutes
Nova UCD	UCD Geary Institute
Research IT Services	UCD Urban Institute
UCD Library	UCD Conway Institute
UCD Conference Facilities	UCD Centre for Synthesis and Chemical Biology
UCD Oakmount Crèche	Centre for Bio-nano Interactions SRC
UCD Applied Language Centre	Solar Energy Centre SRC
UCD Veterinary Hospital	Cligue SRC
New UCD Science Centre	Clinical Research Centre (CRC)

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Nova UCD	
Description	<p>Nova UCD, the Innovation and Technology Transfer Centre, is the hub of knowledge transfer activities at University College Dublin. Nova UCD is responsible for the implementation of UCD policies relating to intellectual property (IP) and for the provision of advice on the identification, protection and exploitation of this IP. Nova UCD works with UCD researchers in identifying the most appropriate business model for the commercialisation of the IP which may involve licensing to commercial partners or the creation of spin-off companies.</p> <p>Nova UCD provides entrepreneurs and knowledge-based start-up companies with a comprehensive business support programme comprising advice, seminars, consultancy, workshops and individual training. Nova UCD also provides incubation and other related facilities for entrepreneurs, campus companies and knowledge-based ventures.</p>
Research Facilities	<ul style="list-style-type: none">• Over 48 incubation units (12 square metres to 64 square metres in size)• 9 bio incubation or 'wet-lab' units• 14 desk spaces• 12 meeting & seminar rooms including a boardroom• Café
Website	http://www.ucd.ie/nova

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Research IT Services	
Description	Research IT Services provides a range of services designed to support and facilitate researchers in their use of IT as an enabler for their research activities.
Research Facilities	<p>Compute Clusters</p> <p>Compute clusters have become an increasingly important tool for many researchers within the University. Research IT Services provides compute cluster facilities to researchers of different usage levels and requirements.</p> <p>Members of the UCD research community have the opportunity to utilise any of the three compute cluster services hosted on the campus, including the UCD ICHEC compute cluster service.</p> <p>Research IT Services currently administers a single physical High Performance Compute Cluster, Phaeton, which is hosted in the Research IT Data Centre providing the most reliable environment on campus for equipment hosting. This cluster is built on IBM Intel hardware and runs Red Hat Enterprise Linux 5. Each worker node within the cluster is currently an IBM HS21 XM Dual Xeon Quad Core E5430 Blade Server with 32GB RAM.</p> <p>Within this single hardware platform, Research IT Services provides two levels of service, a Shared Compute Service which is free to all UCD registered users and a Community Compute Service which in an innovative contribution based service.</p> <p>Collaboration & Visualisation Space</p> <p>Visual communication is an important facet of effective communication for enhanced collaborative learning and research. Research IT Services is keen to provide the user community with the tools required to ensure that as many communication opportunities as possible are exploited. To this end it provides a Collaboration Space in the Daedalus Building offering Video Conferencing, 3D Visualisation and Smartboard technologies. The technologies implemented within the room are cost effective solutions which can be implemented in various locations across campus.</p>
Website	http://www.ucd.ie/itservices/researchit/
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UCD Library	
Description	<p>There are a total of four libraries across the UCD Belfield campus covering all the University's disciplines with a further facility at the Blackrock Smurfit Business School. In addition to the printed and ebooks available which support the research, teaching and learning at UCD, the Library is also home to several special collections. These collections include the Development Studies Collection, Law Collection as well as a collection of unique pre 1900 printed material and archival material. The new <i>Findit@UCD</i> Library service was launched in 2008/09. This portal of electronic journals and databases allows users to conduct searches across a range of products simultaneously.</p>
Research Facilities	<ul style="list-style-type: none">• Four separate campus libraries on the Belfield campus plus one at Blackrock campus• Group study rooms available at all locations• Computer labs provided in the two larger libraries (James Joyce and Health Sciences)• Laptops available on loan• Access facilitated for all staff and students to the library's special collections• E-Journal subscription
Website	http://www.ucd.ie/libraryandarchives.htm back to top

UCD Conference & Events	
Description	<p>UCD offers a full range of state of the art facilities for hosting a conference or event. The UCD Conference & Events Office manages O' Reilly Hall, the university's major venue for events on campus. It also organises all internal logistical aspects of on-campus conferences as well as acting as an advisory service for UCD staff & Academics organising conferences.</p>
Research Facilities	<p>O'Reilly Hall Maximum capacity 1000 in a variety of settings. Catering can also be provided on site for any event.</p>
Website	UCD: http://www.ucd.ie/conferences/ back to top

UCD Oakmount Crèche	
Description	The UCD Oakmount Crèche is located beside a beautiful woodland area. This one storey building has two large gardens at its disposal. All staff are qualified childcare professionals and are supported with further education and training.
Research Facilities	<ul style="list-style-type: none">The UCD Oakmount Crèche provides onsite childcare facilities to UCD staff and students with provision for over 60 children.
Relevance	Particularly useful for research staff coming to UCD or Dublin for the first time, with no family support structure in place locally.
Website	http://www.ucd.ie/creche/
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UCD Applied Language Centre	
Description	The UCD Applied Language Centre (ALC) provides teaching, self-study, testing and advisory services across UCD and to the wider national and international community. The first customised language centre in an Irish University, the ALC provides an excellent range of high-quality facilities for language learners and teachers.
Research Facilities	The ALC offers programmes such as <ol style="list-style-type: none">Foreign Language Electives to undergraduate and graduate students in 12 international languages with levels ranging from beginners to advanced.Graduate Programmes (Grad Dip, H Dip & Grad Cert) in Teaching English to Speakers of Other Languages (TESOL) aimed at pre- and post-experience teachers.English Language courses from beginners to advanced levels to international students including those who need a certain level of competence to gain entry to a degree programme in the University. <ul style="list-style-type: none">The ALC is actively involved in research and engaged in a wide number of independent language education projects and in partnership with international and international bodies. Current research projects are in a range of areas including language teacher education, the teaching of vocabulary, language testing, language policy and planning as well as many others.The ALC is Ireland's main and largest centre for IELTS (International English Language Testing System) examinations and is also a centre for Cambridge ESOL (English for speakers of Other Languages).
Relevance	Research teams being recruited from abroad, particularly PhD students.
Website	http://www.ucd.ie/alc/
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UCD Veterinary Hospital	
Description	The UCD University Veterinary Hospital (UVH) is a state of the art facility which provides clinical case material for the teaching and research needs of the clinical units. It offers facilities for both small and large animals.
Research Facilities	<p>The UVH is composed of a small animal area with dedicated surgical suites and intensive care facilities and a large animal area with dedicated farm animal and equine facilities all of which are complemented by modern diagnostic imaging and laboratory equipment. The UVH moved to its new purpose built premises in UCD in 2002 and since that time has strived to continually improve the facilities and equipment available. The equipment and facilities are state of the art and new additions include:</p> <ul style="list-style-type: none"> • full range of video endoscopic equipment for large and small animals • the first dedicated veterinary 4 slice spiral CT scanner in Ireland • dedicated hydrotherapy facility for small animals • dog donor clinic • equine treadmill • radioisotope scanning • access to small animal MRI
Website	http://www.ucd.ie/vthweb/index.html
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New UCD Science Centre	
Description	<p>When completed, the new UCD Science Centre, covering 67,000m², will match the best science districts in the world. It will be home to Ireland's greatest concentration of scientific minds for decades to come, all working together in a world class environment to provide innovative solutions to global problems.</p> <p>2,000 undergraduates, 1,500 Masters and PhD students, and 1,000 scientists will benefit from state-of-the-art facilities. The UCD Science Centre follows the highly successful creation of a number of research institutes in UCD (e.g. Centre for Synthesis and Chemical Biology, Conway Institute of Biomolecular and Biomedical Research, and the Institute of Food and Health), and it will transform research, teaching, training and innovation in the sciences in Ireland. The emphasis will be on the four core disciplines of Biology, Chemistry, Mathematics and Physics.</p>
Research Facilities	<ul style="list-style-type: none"> • 67,000m² of space • 20 lecture theatres (seating over 2,200) • 11 seminar rooms • 8 cutting edge laboratories (four biology, three chemistry and one science outreach) • An Innovation Hub (centre for the UCD/TCD Innovation Alliance Programme) • Discover Science Laboratory • Science Outreach Auditorium (seating 250) • Exhibition Space
Website	http://www.ucd.ie/campusdevelopment/transformationalprojects/sciencedistrict/buildingdescription
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UCD Geary Institute	
Description	<p>The UCD Geary Institute is Ireland's leading economic and social research institute and is ranked in the top 5% of economic institutions in the world. The Institute conducts leading edge research on life course issues and the way public policy affects life outcomes.</p> <p>The Institute is also home to the Irish Social Science Data Archive (ISSDA), Ireland's leading centre for quantitative data acquisition, preservation, and dissemination. The mission is to ensure wide access to quantitative datasets in the social sciences, and to advance the promotion of international comparative studies of the Irish economy and Irish society. The ISSDA holds a wide and growing range of quantitative data including</p> <ul style="list-style-type: none"> • Social and Political Attitude Surveys • NCPP Employee Attitude Surveys • Surveys on Lifestyle and Attitudes to Nutrition <p>The 1,360m² Geary Institute supports frontier methods of investigation, leading to the very best in research publications and to provide objective analysis and effective solutions that address the challenges facing policy makers.</p>
Research Facilities	<ul style="list-style-type: none"> • Irish Social Sciences Digital Archive (access to datasets) - http://issda.ucd.ie/index.html
Website	<p>http://www.ucd.ie/geary/</p> <p>back to top</p>
UCD Urban Institute of Ireland	
Description	<p>The UCD Urban Institute of Ireland (UII) unites engineers, planners, architects, geographers, economists and scientists to find innovative ways of tackling the challenges of sustainable development.</p> <p>Established in 2002 as a centre for the development of new technologies, policies and ideas to improve the quality of the working and living environment, the UII has become an important international centre for research on urban and development issues.</p>
Research Facilities	<ul style="list-style-type: none"> • URBIS database of spatially referenced GIS data • GIS training centre • Built Environment Laboratory
Website	<p>http://www.ucd.ie/uii/</p> <p>back to top</p>

UCD Conway Institute	
Description	<p>The UCD Conway Institute for Biomolecular and Biomedical Research is Ireland's largest biosciences research institute, dedicated to promoting knowledge, health and economic advancement through excellence in biomolecular and biomedical sciences.</p> <p>Through world-class facilities and infrastructural support, UCD Conway Institute enables researchers in the biosciences to compete successfully on the international stage and to place Irish bioscience in the global spotlight.</p>
Research Facilities	<p>The core technology programme consists of a number of technology platforms where state-of-the-art equipment is centrally located, properly maintained and managed by a cohort of expert staff who provide technical support to Conway researchers.</p> <p>Training is provided in sample preparation, instrument use and, depending on the technology, subsequent analysis of raw data. This allows Conway researchers access to high value, specialised equipment, which is properly maintained and managed.</p> <p>Core technology platforms:</p> <ol style="list-style-type: none">1. Genomics & Transcriptomics Affymetrix GeneChip; Real Time PCR; Illumina Genome Analyser2. Proteome Research Centre Mass Spectrometry Resource; Protein Separations Laboratory; Protein Expression Factory3. Microscopy Electron Microscopy; Transmission Electron Microscopy; Scanning Electron Microscopy; Transmission Light; Fluorescent Light; Confocal; Live Cell; Slide Scanner (Aperio); High Content Analysis; Atomic Force Microscopy (AFM)4. Pre-Clinical Imaging Pre-Clinical Imaging5. Flow Cytometry Flow Cytometry6. Nuclear Magnetic Resonance (NMR) Nuclear Magnetic Resonance (NMR)7. Bioinformatics & IT Bioinformatics & IT8. Histological Sample Preparation Histological Sample Preparation
Website	http://www.ucd.ie/conway/

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UCD Centre for Synthesis and Chemical Biology (CSCB)	
Description	<p>The CSCB is a collaboration in the chemical sciences between University College Dublin, Trinity College Dublin and the Royal College of Surgeons in Ireland.</p> <p>CSCB research provides an understanding of the chemical basis of biology and development, and the use of biological and chemical tools for chemistry, biology and medicine.</p>
Research Facilities	<ul style="list-style-type: none">• Solution-State NMR - http://www.ucd.ie/cscb/main_pages/facilities/solution%20state%20NMR.html• Mass Spectrometry - http://www.ucd.ie/cscb/main_pages/facilities/mass_spectrometry.htm• Peptide Synthesis - http://www.ucd.ie/cscb/main_pages/facilities/peptide_synthesis.htm
Website	http://www.ucd.ie/cscb/

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Centre for Bionano Interactions SRC	
Description	<p>The Centre for BioNanoInteractions (CBNI) is Ireland's national platform for BioNanoInteraction science, and draws together specialists from its Universities, Institutes and companies.</p> <p>Nanoscience has the potential to revolutionise and benefit many aspects of human society, especially in the fields of information technology and medicine. As one of the world's leading Centres of knowledge for bionanointeractions applied to the fields of nanosafety, nanobiology and nanomedicine, CBNI is pioneering many of the new techniques and approaches in the arena.</p> <p>Research at CBNI focuses on obtaining a complete understanding of the mechanisms of interaction between nanomaterials and living systems. Quantitative reproducibility is a cornerstone of the research programme. Research themes include</p> <ul style="list-style-type: none">• Bionanoparticle in-situ: protein biomolecule corona• Bionanoparticle Imaging in cells and tissue• Functional impacts of nanoparticles• High throughput approaches• Nanoparticle interactions in the environment• Nanoparticle interactions with the brain• Theory and computation• Novel nanoparticle synthesis, functionalisation and dispersion
Research Facilities	<p>The core technology programme consists of a number of technology platforms where state-of-the-art equipment is centrally located, properly maintained and managed by a cohort of expert staff who provide technical support to CBNI researchers.</p> <p>CBNI's nanoscience research equipment includes</p> <ul style="list-style-type: none">• Protein Expression Factory• High Content Analysis• CPS Disc Centrifuge
Website	http://www.ucd.ie/cbni/
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Solar Energy Conversion SRC	
Description	<p>The SFI funded Solar Energy Conversion Cluster (SEC) was launched in 2009 with a mission to develop new materials and synthesise devices that mimic the steps involved in natural photosynthesis. Harnessing the 'free energy' of the sun, together with the application of engineering, chemistry, biochemistry, physics and computational modelling the SEC is directing its research to the era-defining needs of our time – sustainable energy production.</p> <p>SEC's research is divided into four strands which parallel the sequence of steps observed in photosynthesis. Strands 1 -3 focus on the fabrication/characterisation of energy related materials in three complimentary areas. The objectives of strand 4 will be the development of commercially viable solar energy modules. The strands are</p> <ul style="list-style-type: none">• Photo-responsive solar cell materials for power generation• Catalytic materials for hydrogen production via photolysis• Nanoporous and catalytic materials for CO₂ capture and fixation• Solar Power and Solar Fuels
Research Facilities	<p>Equipment available within the cluster includes</p> <ul style="list-style-type: none">• A special purpose solar cell device and nanofabrication wet laboratory which includes tubular furnaces, dye synthesis equipment and screen printing instruments.• Access to coating deposition equipment e.g. plasma enhanced chemical vapour deposition (PECVD), atmospheric pressure plasma liquid deposition (APPLD), magnetron sputtering (PVD), neutral atom beam bombardment, sol-gel synthesis.• A significant computational cluster facility.• Characterisation technologies:• Surface morphology: Optical Microscopy, AFM and Optical profilometry.• Coating thickness: Ball cratering device, AFM and Ellipsometer.• Surface Energy: Contact angle.• Surface roughness: Optical profilometer.• Structural property: X-Ray Diffraction, BET and Pore size analysis.• Adhesion: Scratch adhesion tester and Rockwell-C.• Electrochemical and Spectroscopic Analytical Resources which allow for measurements for:• Efficiency• Bandstructure• Structure and Topography• Time resolved spectroscopy <p>Instrumentation includes:</p> <ul style="list-style-type: none">• FEG TEM/ FIB SEM• Focussed ion beam mill/SIMS• XPS• XRD• SPM• Porosimeter/Particle size• Solar Energy Simulators & Analysers• Lasers and LEDs

	<ul style="list-style-type: none">• Glove Box• Electrochemical workstation• HPLC with photodiode array• UV-vis-NIR• GC• PAAR• Heterogenous and Homogenous Catalysis.
Website	http://www.secluster.ie/
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Clique SRC	
Description	<p>Clique is an SFI funded cluster focused on graph and network analysis and visualisation. The Clique research cluster will address the development of computational techniques for the analysis and visualisation of network data - that is, data on collections of entities and the links between them.</p> <p>Clique aims to develop software for analysing social and biological networks of objects and the relationships and interactions between them. Research focuses on the themes of flow, communities anomalous structure and centrality with specific work packages around</p> <ul style="list-style-type: none">• Matrix Analysis Techniques• Probabilistic Techniques• Visualisation• Data Representation and Management• Modelling Information Flow• Discovering structure in large networks• Discovering anomalous structure• Challenges in biomolecular interaction networks
Research Facilities	<p>Software created by the Clique Research Cluster</p> <ul style="list-style-type: none">• Dynamic Community Finder• MOSES• TextLuas• RProteinInteraction• Epistatic MAP Imputation• Ensemble NMF• PICA• GCE• Group betweenness for JUNG• VBLPCM
Website	<p>http://www.cliquecluster.org/</p>

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UCD Clinical Research Centre (CRC)	
Description	<p>The clinical research directed by Dr Peter Doran helps discover ways to improve medical care and to establish new treatments which in turn will improve the quality of life for patients who are living daily with chronic illness.</p> <p>The specific research arenas in which the CRC performs include;</p> <ul style="list-style-type: none"> • Collection of phenotypically well defined repositories of biomaterials for molecular investigations • Development of translational research programmes • Clinical trials and investigations • Population based studies • Investigations into the impact of disease on the individual and society
Research Facilities	<p>The key infrastructures of the CRC are:</p> <p>1. Clinical suite for patient contacts</p> <p>The infrastructure is composed of:</p> <ul style="list-style-type: none"> • Eight outpatient type interview rooms for patient interview, examination and sampling • Four procedure rooms for more complex patient phenotyping, including minor procedures • Recovery room facilities for patients post procedure • Endoscopy suite • DEXA scanner <p>2. IT Systems</p> <p>The UCD CRC Research Information system is available to all hospital-based investigators and provides a standardised platform for the collection, annotation and analysis of data in research studies. Specifically, this system permits the:</p> <ul style="list-style-type: none"> • Identification of patients of interest for research studies • Generation of lists of these patients for review prior to study initiation • Capture of electronic data held in the hospital electronic patient record • Coding of the sample and linkage to a barcode label for specimen tracking • Batch release of numerical and non-numerical clinical phenotype information for linking to molecular and clinical data generated in research investigations <p>The infrastructure which underpins these resources includes application, database, web and security servers as well as substantial data storage and backup.</p> <p>3. Biological material storage facility</p> <p>State-of-the-art, secure biobanking facilities are available at both MMUH and SVUH campuses. A total of eight –80° C and 4 –20° C freezers have been installed to serve the needs of the research community. In addition large scale cryostorage is also available. Recognising the importance of such facilities, significant developments have been made to ensure the reliability, robustness and security of the biobanks. These include;</p> <ul style="list-style-type: none"> • Continuous real time monitoring of all freezers using internally fitted probes • Monitoring of room environment to ensure freezers are running at required ambient temperatures • Installation of back up air conditioning units in the biobak facility • 24/7 support contract with external partner • Preventative maintenance programme • Regular physical checks on facility by both CRC and hospital staff

	<ul style="list-style-type: none">• Connection to emergency power generators <p>In addition a comprehensive system-monitoring and system-failure response plan has been put in place to ensure the security of these key resources.</p> <p>4. Cell & Molecular biology laboratory</p> <p>This facility, is composed of a:</p> <ul style="list-style-type: none">• Cell and tissue culture suite for primary cultures, equipped with sterile cell culture hoods, incubators etc and• General molecular biology laboratory with all basic equipment as well as dedicated facilities for molecular analysis.
Website	http://www.ucd.ie/crc/abouttheucdcrc/facilitiesresources/

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