The E3 Vision

Trinity College Dublin is embarking on an ambitious project to expand education and research activities across three of its Schools: Computer Science & Statistics, Engineering, and Natural Sciences. Recognising the importance for humanity of addressing the challenge of sustainable technological development, the expansion of the three Schools is being executed as a single strategic activity - the E3 initiative.

The E3 initiative is premised on the realization that:

- human inquisitiveness is unquenchable and the need and desire for advanced technologies is a positive characteristic of the human spirit; and
- the natural capital of the planet is finite and should be used to provide flows of goods and services sustainably and equitably.

With the E3 initiative, Trinity promotes the vision of a society where the interdependence between technological innovation and our natural capital is advanced by world-leading research, education and entrepreneurship.

The E3 initiative will position Ireland at the forefront of research in Science, Technology, Engineering, and Mathematics (the STEM disciplines), that are crucial for future economic competitiveness. It will educate engineers and scientists for employment in existing and new technology sectors, equip them with the skills and attributes to lead in the creation of new businesses, and place Ireland in a leadership role globally for the quality of graduates in the STEM disciplines.
E3 Research

Inherently curious and creative, humanity will always seek to both understand the world around us and to create tools, systems and processes that enhance our quality of life. As our understanding of our world grows, we now know better the effects, both positive and negative, that our way of living has on the world around us. These effects lead to challenges that are inherently global, multidisciplinary and complex in nature. The E3 initiative will be among the first internationally to integrate engineering, technology and scientific expertise at scale in addressing some of the biggest challenges facing Ireland and the world – challenges such as climate change, renewable energy, personalised data, water, connectivity, and sustainable manufacturing, among many others.

The span of E3 research has been defined using six Research Themes:

- **Environment** E3 will undertake research for discovery, sustainable use, restoration, renewal and investment in our natural capital for the benefit of society, the economy and biodiversity.
- **Resources** A pro-active interdisciplinary approach to harnessing, distributing and developing new resources offers a way towards greater sustainability ensuring the future liveability of our planet.
- **Production** E3 will address the challenge of resource efficiency, nature inspired data-driven production solutions, networked production and the creation of new value models based on data and service.
- **Data** The ability to discover knowledge and to realise intelligent decision-making systems from underlying data resources is crucial to support sustainability and the health of life on the planet.
- **Well-being** Emerging biomedical technologies have the potential to make a transformative impact on our quality of life, E3 will assist to change the dynamics of healthcare and enhance the well-being of future generations.
- **Cities** An interdisciplinary approach is needed to address enduring and emerging urban societal challenges, stimulate sustainable urban transitions, build the dynamics of urban resilience and enhance the liveability of all cities globally.
The role of specialists in understanding and shaping developments in these areas will continue to be as important, or more important, than it has been to date. Increasingly, however, humanity will require specialists who can contextualise their knowledge in broader circles and who can efficiently and effectively work with experts from other disciplines. The E3 Schools will develop their educational provision in such a way that their graduates will have a strong understanding of these global challenges, as well as the disciplinary skills to address them.

New undergraduate and postgraduate courses will be created in the area of the six E3 Research Themes listed above. This will be achieved by enabling all students in the E3 Schools, including all its constituent disciplines, to have an experience of learning and working in a multidisciplinary environment, being educated by world leading experts in areas of their specialisation and benefiting from best-in-class pedagogy. The resulting graduates will be flexible, adaptable and creative individuals who bring deep disciplinary knowledge and problem-solving expertise to any problem with which they are presented.

They will be highly sought after by indigenous and multinational companies in Ireland and will be equipped and ready to work in an international context if that is their chosen route. During their studies, E3 students will have opportunities to follow their passions, both inside and outside their chosen disciplines, supported by a flexible and responsible academic support system that allows the abilities of each student to flourish.

The educational environment in Trinity College Dublin, plus the specific learning opportunities offered by the E3 initiative will create graduates that:

- have strong technical competence in their chosen discipline;
- will be comfortable and experienced working in teams, including with specialists from other disciplines;
- will be comfortable working on poorly-defined and multidisciplinary challenges;
- will be able to make informed and ethical decisions that balance technical, social and environmental considerations;
- will be skilled communicators across a range of platforms and to varying audiences;
- will have an ability to think at multiple levels of detail and abstraction;
- will be comfortable in both practical and theoretical contexts;
- will be able to confront the limitations of their own knowledge and to address these limitations through collaboration and life-long learning.
Ireland’s population of school-leavers will increase every year to 2028, a rate greater than almost any other country in the developed world. The growing attractiveness of environmental, engineering and technology careers to Irish young people is an amazing success story and Trinity is planning the construction of a new building—the E3 Foundry—to house the first phase of the initiative.
Post Specification

Post Title: Assistant Professor in Earth Surface Geochemistry

Post Status: Tenure Track

School: Discipline of Geology, School of Natural Sciences, Faculty of Engineering, Mathematics and Sciences

Location: Museum Building, Trinity College Dublin, the University of Dublin, College Green, Dublin 2, Ireland

Reports To: Head of School, School of Natural Sciences

Salary: Appointment is expected to be made on the Assistant Professor (Lecturer) salary scale (€33,875 - €48,091) at a point in line with Irish Government Pay Policy

Closing Date: 12 Noon (GMT), Thursday 6th September 2018

This position is tenable from 1st November 2018.

The successful candidate will be expected to take up the post by 1st November 2018 or as soon as possible thereafter.

Please note that Garda (Police) vetting will be sought in respect of the successful candidate for the post.
Post Summary

This Assistant Professor appointment will be in the broad field of Earth Surface Geochemistry. The Geology Discipline in Trinity College Dublin is setting up an *Earth’s Surface Research Laboratory*, a state-of-the-art facility designed expressly for the analysis of soils and sediment. The facility is fully funded to undertake a large, 10-year collaborative research project on Earth surface geochemistry, and will be supported by full time technical staff. The appointee will direct the facility on a reduced teaching load during the initial term of appointment. The successful candidate will have an opportunity to expand the facility and is expected to develop an active externally funded programme of research linked to Earth and Environment – an interdisciplinary research theme in the School.

Background to the Post

Geology, which is part of the School of Natural Sciences, is a vibrant, active unit with twelve academic staff and seven support staff (including administrative, experimental officer, technical and attendant staff). Since 2012, the numbers of post-doctoral researchers has risen to nine and there has been a doubling of the numbers of postgraduate students to 30+. Currently there are over 50 sophister students in Geology and Earth Sciences and up to 350 taking Freshman Geology modules annually. This new post concerns itself with earth surface geochemistry. The candidate will develop and lead the Earth’s Surface Research Laboratory, and their research will contribute to deeper and more quantitative understanding of earth surface processes. The Discipline of Geology values observational and quantitative skills that are used to investigate the complex interactions between the solid Earth, the biosphere and the hydrosphere.

The Earth’s Surface Research Laboratory will be equipped with two state-of-the-art XRF instruments, an XRF preparation facility, a clean room-housed elemental analyser (TIC/TOC/S), and a clean room-housed Hg analyser. Data from all instruments will be managed by a laboratory information management system. The laboratory will also have access to a top-of-the-range ICP-OES and an ICP-MS. In addition to this post, the laboratory will be staffed with two dedicated full-time research assistants and fixed short-term staff for additional sample preparation. The laboratory has secure funding for a 10-year period through a service level agreement.

In addition to the Earth’s Surface Research Laboratory, Geology at Trinity College Dublin have also recently significantly upgraded its research infrastructure. The new post holder will have access to full rock preparation facilities and the following analytical laboratories: two state-of-the-art laser-ablation ICP-MS laboratories, a clean wet laboratory and dedicated ICP-OES and MS instruments, a quality XRD instrument, two geoscience dedicated field-emission-gun SEM (one equipped with Raman and full colour CL), and a new IRMS for the analysis of H-C-N-O isotopes in organic matter and carbonates.

(www.tcd.ie/Geology/research/facilities/)
The successful candidates research will provide further opportunities for cross-disciplinary research in the School of Natural Sciences within its four cross-disciplinary research themes: Ecology and Evolution; Earth and Environmental Science; Society, Space and Environment; and Molecular and Comparative Physiology. The Earth Surface Geochemist will also be expected to engage with researchers in other Schools in Trinity College Dublin, to link with the Irish Centre for Research in Applied Geosciences (iCRAG), and to collaborate with government and/or the industry sector.

Standard Duties and Responsibilities of the Post

The successful candidate will:

- Be expected to lead the Earth’s Surface Research Laboratory and to foster interdisciplinary, collaborative research and teaching.

- Teach in the field of Earth Surface Geochemistry at undergraduate and postgraduate levels; develop learning environments that are consistent with modern teaching and learning practices and that are flexible, student-centred and accessible, utilising appropriate technology.

- Develop further their internationally recognised research profile, including PhD supervision, publication and the generation of external research income.

- Participate with colleagues in developing and maintaining links and partnerships with Government, the industry sector and the wider community both nationally and internationally.

- Undertake such administrative responsibilities as directed by the Head of School or their nominee.
Person Specification

Qualifications
- Candidates must hold a Ph.D. in a relevant research area.

Knowledge and Experience

The candidate will have:

Essential
- Evidence of research potential and achievements, including publications, in soil and/or sediment geochemistry.
- Expert knowledge in major and trace element geochemistry.
- Demonstrated analytical skills in XRF analysis.
- Ability to contribute to undergraduate and postgraduate teaching in the School.

Desirable
- Knowledge of Elemental (C, N, S, Hg) analysis.
- Experience and documented success in obtaining research funding.
- Evidence of collaboration with government and/or industry sector.
- Experience of supervising undergraduate dissertations.
- Experience of teaching at Masters Level.
- Experience of research student supervision.
- Experience of working in an interdisciplinary environment.

Skills and Competencies
- Demonstrated potential to lead a geochemical laboratory in a University setting.
- Excellent communication skills.
- Demonstrated enthusiasm for, and success in teaching undergraduate and postgraduate students.
- Enthusiasm and aptitude for a collegial style of working, for collaborative and interdisciplinary work in teaching and research, and for international networking.
The School of Natural Sciences, comprising the Disciplines of Botany, Geography, Geology and Zoology, the Centre for the Environment and the Centre for Biodiversity Research, is one of the largest schools in the Faculty of Engineering, Mathematics and Science and hosts biological, physical and social scientists.

The School currently accommodates 40 academic staff, ca. 14 postdoctoral research fellows and ca. 164 postgraduate students (including 89 research and 75 taught students). The School of Natural Sciences is one of the first in Ireland to hold an Athena SWAN bronze award for addressing issues in gender inequality at: http://www.naturalscience.tcd.ie/news/articles/2015/athenaswan.php.

Natural Sciences taught programmes are varied as the School offers moderatorships (undergraduate degrees) in Earth Sciences, Environmental Sciences, Geography, Geology, Botany and Zoology and contributes to other moderatorships including Neurosciences, Geography and Politics and to the Two Subject Moderatorship (TSM) programme (http://www.naturalscience.tcd.ie/undergraduate/). The School has also a major commitment to graduate teaching and supervision and currently hosts three taught masters’ programmes (http://www.naturalscience.tcd.ie/postgraduate/).

Useful Websites
School of Natural Sciences: http://www.naturalscience.tcd.ie
Discipline of Geology: http://www.tcd.ie/Geology
Trinity College Dublin: http://www.tcd.ie
Human Resources: http://www.tcd.ie/hr
Trinity College Dublin, the University of Dublin

Trinity is Ireland’s premier university, with a proud tradition of excellence stretching back to its foundation in 1592. The oldest university in Ireland, and one of the oldest in Europe, today Trinity sits at the intersection of the past and the future, and is ideally positioned as a major university in the European Union. Our 47-acre campus is located in the heart of Dublin city centre and is home to historic buildings dating from the University’s establishment, as well as some of the most cutting-edge teaching and research facilities in Ireland. Students at Trinity benefit from a unique educational experience across a range of disciplines in our three faculties – Arts, Humanities, and Social Sciences; Engineering, Mathematics and Science; and Health Sciences. The pursuit of excellence through research and scholarship is at the heart of a Trinity education, and our researchers have an outstanding publication record and strong record of grant success.

Trinity has developed 18 broad-based multidisciplinary research themes that cut across disciplines and facilitate world-leading research and collaboration within the University and with colleagues around the world. These internationally recognised themes include such diverse areas as Cancer, Immunology, Telecoms, Identities in Transformation, Nanoscience, Neuroscience, and Making Ireland. Researchers from across the University work together in innovative ways to develop new and exciting approaches to their research and explore the frontiers of knowledge in the 21st century. In creating these dedicated research themes, Trinity’s researchers are able to become a more powerful force on the global stage, successfully competing for large-scale grants and attracting top students and faculty to the University.

Trinity is home to Ireland’s first purpose-built Nanoscience research institute, CRANN, which opened in January 2008. This state-of-the-art facility houses 150 scientists, technicians, and graduate students in specialised laboratories, fostering creative innovations that have seen Trinity’s researchers make significant breakthroughs.
The Trinity Long Room Hub for Arts and Humanities Research Institute is the University’s flagship institute for research in the Arts and Humanities, providing a world-class environment for cross-disciplinary collaborative projects. The Long Room Hub provides a central location through which the University’s internationally respected Arts and Humanities research can become more visible, demonstrating its relevance for contemporary and future societies. Researchers from across the University regularly participate in debates on topical issues facing the world today. As well as operating an International Visiting Research Fellowship programme, the Long Room Hub also hosts major EU-funded Digital Humanities projects.

One of the most instantly recognised parts of Trinity’s campus is the famous Old Library, home to the historic Book of Kells as well as other internationally significant holdings in manuscripts, maps, and early printed material. Trinity’s Library is the largest research library in Ireland and is an invaluable resource to Trinity’s students and research community. Built up over the four centuries of the University’s existence, the Library’s collections have benefitted from its status as a Legal Deposit library for the past 200 years, granting Trinity the right to claim a copy of every book published in Ireland and the UK. At present, the Library’s holdings span approximately 4.25 million books, 22,000 printed periodical titles, and access to 60,000 e-journals and 250,000 e-books.

Trinity attracts top students from Ireland and abroad and prides itself on the consistently high standard of student admitted to the University every year. These students are drawn to Trinity for the excellence of our research-led teaching and for the quality and prestige a degree from this University confers. Trinity has also pioneered accessibility to education in Ireland, becoming the first university in the country to reserve 15% of its undergraduate places for students from non-traditional learning groups. Trinity is the top-ranked European university for student entrepreneurship and Europe’s only representative in the world’s top-50 universities for student entrepreneurship.

Our alumni have gone on to shape the history of Ireland and of Western Europe in a wide range of fields. These include such notable figures as Jonathan Swift, Oscar Wilde, William Rowan Hamilton, Edmund Burke, William Stokes, Denis Burkitt, Louise Richardson, Lenny Abrahamson, and Anne Enright. Three of Trinity’s graduates have been awarded Nobel prizes: Ernest Walton for Physics in 1951; Samuel Beckett for Literature in 1968; and William Campbell for Physiology / Medicine in 2015. Trinity also counts the first female President of Ireland among its alumni in Mary Robinson, as well as other notable former Presidents Douglas Hyde and Mary McAleese. At Trinity, we are justifiably proud of our tradition, and we strive to uphold this excellence as we face the demands of the 21st century.
Ranking Facts

Trinity is the top ranked university in Ireland. Using the QS methodology we are ranked 88th in the world and using the Times Higher Education World University Rankings methodology we are 117th in the world.

Overall
- Trinity is Ireland’s No.1 University in the QS World University Ranking, THE World University Ranking and the Academic Ranking of World Universities (Shanghai).
- Trinity is ranked 88th in the World, and 29th in Europe, in the 2017/2018 QS World University Ranking.
- Trinity is ranked in the Top 100 for Graduate Employability in the QS 2017 Rankings.
- Trinity is in the Top 50 most innovative universities in Europe according to Reuters.
- Between 2010 and 2015, Trinity was ranked the top university in Europe for entrepreneurship according to Pitchbook’s independent analysis.

Internationalisation
- Trinity is ranked 52nd in the world in the THE World University Ranking for international outlook.

Research Performance
- Of the 981 institutions included in the THE World University Rankings for 2017, Trinity is in the top 15% internationally for research performance.
- Trinity is ranked in the top 15% internationally by QS for citations.

In the QS World University Rankings
- Trinity featured in the world’s elite (Top 200) institutions in 25 of the 28 subjects in which it was evaluated by the QS World University Rankings by Subject in 2015. Of these, Trinity ranked in the top 100 in the world in 14 subjects and in the top 50 in the world in 6 subjects: English Language and Literature; Nursing; Politics and International Studies; History; Biological Sciences; and Modern Languages.
- In three out of the last four years, Trinity has been consistently ranked in the Top 50 worldwide for the following areas: English Language and Literature; Nursing; Modern Languages; and Politics and International Studies.
- In the QS Faculty rankings, Trinity has been consistently ranked in the Top 100 globally for Engineering and Technology and Arts and Humanities over the last four years.
The Selection Process in Trinity

The Selection Committee (Interview Panel) may include members of the Academic and Administrative community together with External Assessors who are expert in the area. Applications will be acknowledged by email. If you do not receive confirmation of receipt within 1 day of submitting your application online, please contact the named Recruitment Partner immediately and prior to the closing date/time. Given the degree of co-ordination and planning to have a Selection Committee available on the specified date, Trinity College Dublin regrets that it may not be in a position to offer alternate selection dates. Where applicants are unavailable, reserves may be drawn from a shortlist. Outcomes of interviews are notified in writing to applicants and are issued no later than 5 working days following the selection day.

In some instances, the Selection Committee may avail of telephone or video conferencing. Trinity College Dublin’s selection methods may consist of any or all of the following: Interviews, Presentations, Psychometric Testing, References and Situational Exercises. It is the policy of the University to conduct pre-employment medical screening/full pre-employment medicals. Information supplied by applicants in their application (Cover Letter, CV, statements etc.) will be used to shortlist for interview.


- Non-EEA applicants should note that the onus is on them to secure a visa to travel to Ireland prior to interview.
- Non-EEA applicants should also be aware that even if successful at interview, an appointment to the post is contingent on the securing of an employment permit.

Equal Opportunities Policy

Trinity is an equal opportunities employer and is committed to employment policies, procedures and practices which do not discriminate on grounds such as gender, civil status, family status, age, disability, race, religious belief, sexual orientation or membership of the travelling community. On that basis we encourage and welcome talented people from all backgrounds to join our staff community. Trinity’s Diversity Statement can be viewed in full at https://www.tcd.ie/diversity-inclusion/diversity-statement.

Pension Entitlements

This is a pensionable position and the provisions of the Public Service Superannuation (Miscellaneous Provisions) Act 2004 will apply in relation to retirement age for pension purposes. Details of the relevant Pension Scheme will be provided to the successful applicant. Applicants should note that they will be required to complete a Pre-Employment Declaration to confirm whether or not they have previously availed of an Irish Public Service Scheme of incentivised early retirement or enhanced redundancy payment. Applicants will also be required to declare any entitlements to a Public Service pension benefit (in payment or preserved) from any other Irish Public Service employment. Applicants formerly employed by the Irish Public Service that may previously have availed of an Irish Public Service Scheme of incentivised early retirement or enhanced redundancy payment should ensure that they are not precluded from re-engagement in the Irish Public Service under the terms of such Schemes. Such queries should be directed to an applicant’s former Irish Public Service Employer in the first instance.
Applicants formerly employed by the Irish Public Service that may previously have availed of an Irish Public Service Scheme of incentivised early retirement or enhanced redundancy payment should ensure that they are not precluded from re-engagement in the Irish Public Service under the terms of such Schemes. Such queries should be directed to an applicant’s former Irish Public Service Employer in the first instance.

GARDA Clearance
Garda (Police) vetting will be sought in respect of the successful candidate for the post. PLEASE NOTE: The successful candidate will be required to complete and return a Garda vetting form. This form will be forwarded to An Garda Síochána (Irish Police) for security checks on all Irish addresses at which they have resided. An Garda Síochána will make enquiries with the Police Service of Northern Ireland with respect to addresses in Northern Ireland. If an applicant is not successful in obtaining the post for whatever reason, this information will be destroyed. If an applicant, therefore, subsequently comes under consideration for another position, they will be required to supply this information again.

While applicants must complete information in relation to all addresses at which they have resided, the vetting is only done on addresses on the island of Ireland. If an applicant has resided / studied in countries outside of Ireland for a period of 6 months or more, it is mandatory for them to furnish a Police Criminal Records Check/ Police Certificate from those countries stating that they have no convictions recorded against them while residing there. Applicants will need to provide a separate Police Criminal Records Check/ Police Certificate for each country in which they have resided. The Police Criminal Records Check/ Police Certificate must be dated after the date the applicant left the relevant country. Applicants should provide documentation in the English and/or Irish language. Translations must be provided by a registered translation company/institute in the Republic of Ireland; all costs will be borne by the applicant. Only original version documents will be accepted.

It is the responsibility of the applicant to seek security clearances in a timely fashion as they can take some time. **No applicant will be appointed without this information being provided and being in order.**

The following websites may be of assistance in this regard:
- [www.disclosurescotland.co.uk](http://www.disclosurescotland.co.uk)
- [www.psni.police.uk](http://www.psni.police.uk)
  This website provides information on obtaining a national police clearance certificate for Australia
  This website provides information on obtaining police clearance in New Zealand.
- [www.courts.govt.nz](http://www.courts.govt.nz)

For other countries not listed above applicants may find it helpful to contact the relevant embassies who could provide information on seeking Police Clearance. Original Police Clearance documentation should be forwarded to Human Resources where it will be copied and the original returned to the applicant by post. **Any cost incurred in this process will be borne by the Applicant.**
Contact Information

Interested applicants may contact the following persons by e-mail, in the first instance, with informal enquiries:

- Professor Patrick Wyse Jackson, Head of School of Natural Sciences: wysjcknp@tcd.ie
- Professor David Chew, Head of Discipline of Geology: chewd@tcd.ie

Application Information

Applications will only be accepted through e-recruitment (https://jobs.tcd.ie)

Applicants must provide the following information in applying for this position:

- cover letter;
- full *curriculum vitae* to include a list of publications and the names and contact details of 3 referees (email addresses if possible);
- research plan (summarising the candidate’s research accomplishments to date, and the research the candidate plans to conduct in the next five years, along with plans for securing competitive research funding – maximum of 2 pages);
- teaching statement (summarising teaching experience and approach – maximum of 2 pages).

Please Note

- Applicants who do not address the application requirements above will not be considered at the short list stage.
- Applicants should note that the interview process for this appointment may include the delivery of a presentation.
- If you have a query regarding e-recruitment, please contact::
  Ms. Lisa Hynes, Recruitment Partner, Human Resources, LIHYNES@tcd.ie