



University of  
St Andrews

**School of Chemistry**

**Strategic Plan 2020–2025**

The **purpose** of this strategic plan is to provide a five-year framework through which we can deliver a School whose core functions of teaching and research are provided at a level consistent with the University strategic pillars of World-leading, Global, Diverse and Entrepreneurial St Andrews.

This document is intended to be read in conjunction with the Delivery Plan and yearly Operational Plans produced by the School, which set out the detailed resource implications required to implement this Strategy.

**Our mission** is to nurture a collegiate, diverse and entrepreneurial environment in which future generations of chemical scientists can be inspired, develop and achieve their full potential through globally recognised education and world-leading research that impacts positively on society.

**Our values are:**

- **Fairness and inclusivity:** we are inclusive and open, collegial and team-based in the way we work, and we strive to ensure all members of our School community have the opportunities they need to be successful;
- **Rigour and integrity:** we deliver education and research efficiently, ethically and responsibly with integrity and rigour;
- **Excellence and enterprise:** we achieve excellence in the quality of all of our work through equality of opportunity and diversity of voices, and provide the support needed for staff to be enterprising and entrepreneurial;
- **Connectedness:** we recognise positive intra- and interdisciplinary partnerships are critical to our success as we strive to be a global force in Chemistry.

**Vision**

Chemistry is at the heart of many of the important challenges facing society today. Without skilled human resource and a strong research base in the chemical sciences our ability to tackle the complex and difficult problems that face the world will be severely diminished.

Our vision for the School of Chemistry is to build an outstanding scientific community that is genuinely diverse, is capable of tackling large interdisciplinary problems through leadership and teamwork, and is ideally positioned to contribute positively to societal challenges. We will enhance our teaching and research environment and promote our core values to provide opportunities for all to achieve up to and beyond their expectations.

The result will be a modern School of Chemistry with an environment that facilitates the delivery of scientific research and teaching in a manner that adheres to the highest standards of safety, excellence, integrity and diversity, and to build a vibrant environment that can change as requirements and standards evolve. It will encompass a developing outlook on postgraduate and undergraduate training as the needs of society change. It will have the concept of connectedness with other departments around the world (global and world leading), with other academic disciplines (interdisciplinarity), and with industry and society at large (enterprise and entrepreneurship) embedded into our culture, and will rely on, and be underpinned by, outstanding core chemistry skills.

Our ambitions for staffing and broadening diversity, and our approach to developing the skills of our teaching staff to update, for example, our technology-enhanced learning, are all aimed at making St Andrews a world-leading chemistry centre that maximises our output. This will also require underpinning infrastructure, instrumentation and built environment that enables and supports the highest safety, excellence and diversity standards.

Over the next five years we will cement and enhance the School's strengths by investing in people to ensure that we are well placed to contribute to the needs of both the University and society.

In research, the School will have a vibrant mix between academics and research fellows who will lead a dynamic and diverse cohort of PhD students and postdoctoral researchers in tackling novel scientific problems of great significance with intellectual rigour and integrity. We will have partnerships with leading groups and Centres of Excellence around the world that will reinforce our global standing in the field. We will be able to continuously adapt to changing priorities for research.

To support the research effort, it is essential to prioritise investment in maintaining and updating our research equipment so that we retain our state-of-the-art capabilities at a level suitable for a modern, world-leading research institute. To support our research base, our complement of supportive technical and experimental officer staff will be adjusted to suit the developing needs of the School as a whole. At the same time, we will maintain and develop a modern graduate school offering with a vibrant PhD cohort with a professional graduate school that instils modern standards and innovations in postgraduate training.

Underpinning all our research efforts will be a commitment to the highest standards of safety and security.

In teaching, we will restructure to establish a professional education division that will impact positively on student experience and outcomes. The learning environment we will develop will provide a focus for the introduction of new technology into teaching, as well as ensuring that our degree offerings in Chemistry and related Chemical Sciences are attractive to our recruitment market and continue to meet the current and emerging graduate skills needs of society.

The School will be efficient in its use of finance to invest strategically.

**In order to achieve our vision, we have identified the following five strategic challenges**

## **Strategic challenge 1**

### **Investment in people for future strength and stability**

The School recognises that in order to preserve its world-leading profile in all our areas of strength within the chemical sciences investment in people is essential. We recognise that it will be necessary to address both the age and diversity profile of our staff, and the well-being of all members of the Chemistry community in St Andrews.

**Our aim** is to build a secure environment for staff and students and secure the future strength of our significant and recognised research presence in two key areas: (i) synthesis and catalysis and (ii) functional and energy materials by astute and targeted recruitment.

We will do this by:

- achieving a steady state staff complement of around 36 research active staff (30 staff on standard permanent contracts, 4 to 6 independent fellowships) and 6 education-focused staff, three of which will be on staggered fixed-term contracts;
- appointing to three new academic positions to replace retiring professors — prioritising synthesis and catalysis, and functional and energy materials;

- actively identifying and seeking to appoint individuals with outstanding long-term potential who hold or can win independent externally funded fellowships, for example, Royal Society URFs, UKRI FLFs etc. In this way, we will maintain a cohort of four to six such fellows at steady state;
- instituting a number of fixed-term (three year) Diversity Fellowships that have specific targets of addressing identified challenges in the diversity of our education, research or impact portfolios;
- instituting a rigorous and motivational training and mentorship programme for all of our staff on fellowships such that they are supported in their transition to the next phase of their career;
- working with the University to monitor and improve well-being throughout the School.

## **Strategic challenge 2**

### **Upgrading and future-proofing departmental infrastructure**

We recognise that the School has an ageing inventory of large instrumentation, much of which will be end-of-life within much less than a decade. This instrumentation must be replaced in order to safeguard our ability to perform research at the level of quality and impact to which we aspire. There are also significant issues with the built environment in which the School is housed that means it is less than appropriate for a modern School of Chemistry. We recognise that these issues have a significant impact on our efficiency in delivering our education portfolio, performing our research and our ability to recruit staff.

**Our aim** is to ensure that the research infrastructure in the School is world-leading and that it is maintained and refreshed regularly in a financially sustainable manner.

We will do this by:

- developing replacement and refurbishment plans for all research instrumentation within the School. Using these schedules, we will plan financially, in consultation with and support from the University, to implement these replacements and refurbishments;
- identifying areas in which significant operational improvements can be made in terms of resource usage. We will work with the University to develop solutions in these areas that can exploit savings in, for example, energy, water and other scarce resource usage;
- working with the University in order to ensure the bespoke teaching space that is associated with the delivery of chemical education remains fit for purpose and meets the requirements of our professional education mission;
- developing budgetary mechanisms that allow the School to invest in teaching equipment and instrumentation on a yearly basis;
- working with the University in order to identify mechanisms and timescales for the upgrade and refurbishment of the built environment that houses the operations of the School and to ensure that it is appropriate for a world-leading, modern and forward-looking School;

- professionalising the Health and Safety standards, reporting and record keeping within the School to ensure that the standards of personnel and building safety are fully in keeping with a modern School of Chemistry.

### **Strategic challenge 3**

#### **Improving student experience and outcomes through developing our teaching and education**

**Our aim** is to develop our structures for the delivery of education and training activities in order to continually improve our student experience and well-being—both undergraduate and graduate. These changes will allow our research staff to use their time more efficiently, thereby also improving our research profile and impact.

We will improve the delivery of our student experience and outcomes by:

- increasing the number of education-focused staff in the School from 4 to 6;
- creating clearly defined roles and career pathways for our education-focused staff that allow natural progression into critical roles such as Director of Teaching, Head of School etc, thereby ensuring that key elements of knowledge and experience are retained within the School;
- refreshing our undergraduate degree provision to ensure that it remains attractive within our key recruitment markets, continues to meet the needs of potential employers and retains its accreditation with the Royal Society of Chemistry;
- creating new structures that will improve the training experience of our postgraduate research students. We recognise the need for defined pathways that ensure a common set of training and experiences for all graduate students in the School, regardless of the programme to which they are recruited;
- exploiting technology to improve educational outcomes and efficiency of delivery where appropriate;
- working with the University to monitor and improve student well-being.

### **Strategic challenge 4**

#### **Diversity by design**

**Our aim** is to improve the diversity of our School in all areas as appropriate. We recognise the challenges associated with diversity in all its forms, but understand that without an improved diverse student and employee base we will not be serving society properly.

We will do this by:

- working with the University to instigate a programme of new three-year Diversity Fellows aimed at sections of society that are underrepresented in our school;

- developing a focused programme to develop the professional skills required by the fellows to ensure the pipeline to academic positions is as secure as possible;
- monitoring student results to ensure that our teaching and assessment remains balanced and fit for purpose for a modern science degree;
- ensuring diversity issues are highlighted continuously in the School by making sure that every meeting agenda has an item that allows staff to discuss any issues.

## **Strategic challenge 5**

### **A global and entrepreneurial School**

**Our aim** is to improve the global reach and impact of the school by developing an enterprising and international environment.

We will do this by:

- promoting global partnerships (both School- and University-centred) by engaging in the University-run schemes, developing both our intra- and interdisciplinary connectedness;
- engaging with the University to use the Handsel scheme to maximise both the quality of our postgraduate cohort and partnerships with global partners;
- promoting the EaStCHEM link with Edinburgh to cement our leading position in Scotland;
- promoting impact and enterprise by strategic use, where appropriate, of schemes including the Royal Society Industry Fellowships (to support people) and Scottish Enterprise (to support specific projects) and by championing routes to exploitation of research;
- developing the training of our student cohort to include entrepreneurship and responsible innovation.

### **Measuring Success**

The measures by which we assess how successfully we have achieved our vision will be a mixture of external (REF, NSS, newspaper rankings etc) and internal assessments of progress (development of fellowship careers, numbers of research publications/grant applications, student feedback, exit interviews etc). Metrics and key performance indicators, based on the list supplied by University Planning, will be used responsibly and sparingly to guide the overall direction of strategy implementation.