


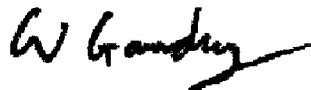
# Summary Application Form for the Award of Chartered Chemist (via the AstraZeneca accredited scheme)


Details:

<b>Candidate:</b>	Nessa Carson	<b>RSC Membership Number:</b>	436144
<b>Team Manager:</b>	Simon Hardy CChem?: N	<b>RSC Membership Number (if applicable):</b>	
<b>Mentor: (if necessary)</b>	William Goundry CChem?: Y	<b>RSC Membership Number:</b>	345466

Summary of evidence found in annual performance appraisal documentation (including feedback). If the evidence is not captured in full in these documents, please describe in detail below:

<b>A.</b>	<b>Demonstrate and develop your knowledge of the chemical sciences</b>
<b>A.1.</b>	<p><a href="#">Use a high level knowledge of the chemical sciences to inform decisions and create impact.</a></p> <p><i>Evidence:</i></p> <ul style="list-style-type: none"> <li>As project lead on an internal controlled vocabulary of catalysts, I need to prioritize the roadmap so resources are not overwhelmed. I can do this based on my historical frequent use and literature knowledge of homogeneous catalysts, as well as discussions with lab scientists.</li> <li>I draw on my past experiences in the lab combined with more recent learnings of data practices to make decisions that makes data entry easier for scientists, as part of my Business Change Lead (BCL) role on an electronic lab notebook (ELN) rollout.</li> <li>As business lead of the AstraZeneca internal and external reaction database Reaction Connect, I must regularly make decisions that will affect chemists who use the platform. Many of these are to do with the user experience within Route Manager, the front end platform that surfaces Reaction Connect data.</li> </ul> <p><i>Supporting comments from mentor/manager:</i></p> <ul style="list-style-type: none"> <li>Nessa has an extremely broad and deep knowledge of the chemical sciences. She applies this to inform decisions which impact widely across 100s of colleagues.</li> </ul>
<b>A.2.</b>	<p><a href="#">Continue to develop your knowledge of the chemical sciences and use this to support your work.</a></p> <p><i>Evidence:</i></p>

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Mentor's signature 	Date: 20/08/2025


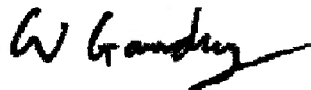
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Director's signature 	Date: 12/9/2025


	<ul style="list-style-type: none"> <li>• My main method of knowledge development is from conference attendance. I have attended 27 virtual and in-person conferences in May 2023–May 2025, mostly on the topics of chemical data, digital transformation in the lab, and the future of synthetic chemistry.</li> <li>• I regularly attend webinars from sources such as Chemistry World and ACS, as well as smaller groups such as Pistoia Alliance and Alchemy Hub (generally a few times per month).</li> <li>• I keep a publicly-available database of chemistry conferences, with 25,940 web impressions from members of the public over the past 12 months (06 May 2024 to 05 May 2025). To maintain this, I need to keep updated with the chemistry community's events and interest areas.</li> <li>• I keep up to date with the chemistry literature through RSS feeds and email updates, and share papers of interest on internal social media and Teams groups, as well as externally in chemistry community Discord groups and on social media.</li> </ul>
	<p><i>Supporting comments from mentor/manager:</i></p> <ul style="list-style-type: none"> <li>• Nessa is recognised externally in the chemistry community as an expert on Chemistry conferences. Her personally curated database is a widely used resource by the chemistry community. Nessa regularly attends training courses including through the AZ learning platform Degreed.</li> </ul>

<b>A.3.</b>	<p><a href="#">Solve problems and draw conclusions by interpreting data, using evidence based judgement and critical thinking to develop courses of action</a></p> <p><i>Evidence:</i></p> <ul style="list-style-type: none"> <li>• I have developed a controlled vocabulary (CV) of solvents for use across AstraZeneca, and a subsidiary list based on this for the incoming ELN. Translating the raw CV for ELN use involved liaising with multiple stakeholders, while using chemistry knowledge to correct errors with a high level of detail.</li> <li>• I have helped to devise a set of conclusion phrases, as well as a slightly modified (due to the types of experiments used) set for use in the incoming ELN. The work to devise this list involved careful consideration of every possibility of synthetic chemistry experiments, along with how these data will be reused after generation. The conclusion phrase set is recommended for general synthetic chemistry use and has been publicly shared in a joint editorial between <i>Org. Lett.</i> and <i>J. Org. Chem.</i> (<a href="https://dx.doi.org/10.1021/acs.orglett.3c01282">https://dx.doi.org/10.1021/acs.orglett.3c01282</a>).</li> </ul> <p><i>Supporting comments from mentor/manager:</i></p> <ul style="list-style-type: none"> <li>• Nessa has demonstrated strong critical thinking repeatedly in her role at AZ. The examples given above highlight her ability to used evidence based judgements to develop solutions used by colleagues.</li> </ul>
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<b>B.</b>	<b>Professionalism</b>
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<b>B.1.</b>	<p><a href="#">Work with autonomy, accountability and integrity in your role.</a></p> <p><i>Evidence:</i></p>
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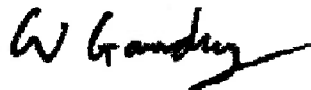
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	<ul style="list-style-type: none"> <li>I have a number of project leadership roles, where I make decisions that can impact across AstraZeneca chemistry. For example, I am Business Owner on AZ's reaction network platform and on the substance management database, as well as technical lead on an implementation project for a third-party AI tool to allow FAIRification (findability, accessibility, interoperability, and reusability) of historical chemistry reports.</li> <li>I am part of the BCL community on a future ELN that is being rolled out across the company including to some of my department. Since the BCL's were chosen to represent lab scientists, data aspects can be relatively neglected so I regularly need to advocate for both my department's needs and overall data needs such that the ELN continues to let our other internal tools work smoothly.</li> <li>I sourced and implemented a professionalism and diversity code of conduct for the RSC Heterocyclic and Synthesis Group flagship Grasmere symposium from 2025 onwards, to which all attendees will be required to adhere.</li> <li>Working with the RSC Heterocyclic and Synthesis Group, I was one of the two main organizers of the Postdoctoral Symposium, held at AstraZeneca Macclesfield in May 2024. This involved organizing the use of the venue, catering, information for delegates, and giveaway merchandise. Finding the right people to talk to and then bringing AstraZeneca and the RSC together took significant work.</li> </ul>
	<p><i>Supporting comments from mentor/manager:</i></p> <ul style="list-style-type: none"> <li>Nessa has an abundance of evidence demonstrating her ability to work with autonomy and integrity. She is capable of owning and driving forwards projects with her own initiative.</li> </ul>

<b>B.2.</b>	<b>Make a successful and impactful contribution as part of team.</b>
	<p><i>Evidence:</i></p> <ul style="list-style-type: none"> <li>Essentially all the work I do at AstraZeneca is performed with teams, and nearly every day I meet virtually with colleagues from various teams, in Sweden in particular.</li> <li>Although I am formally part of the Early Chemical Development (ECD) area, I also work within the Digitalization team, attending all of their team meetings, and the Data Science &amp; Modelling team, attending many of their team meetings and collaborating on several projects.</li> <li>Since the future ELN introduction is an active project that is being rolled out in many different stages, the community has regularly to respond to questions and challenges about using the ELN to enable science. I am one of two BCLs responsible for planning and onboarding of my department (110 users, for now) to the new platform, requiring significant communication with IT and external project leads, external consultants, BCLs from other departments, and superusers, and to general users.</li> </ul> <p><i>Supporting comments from mentor/manager:</i></p> <ul style="list-style-type: none"> <li>Nessa's role at AZ spans across several different business groups. She contributes across these groups including different geographical locations. She has also demonstrated impactful team work as part of the RSC Heterocyclic and Synthesis Group.</li> </ul>

<b>B.3.</b>	<b>Plan, organise, deliver work, and manage resources to meet organisational requirements.</b>
	<i>Evidence:</i>


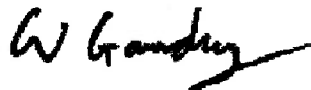
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	<ul style="list-style-type: none"> <li>• I developed and am responsible for the digitalization roadmap for my area (~150 people) at AstraZeneca, which constitutes a 5-year continuous improvement plan.</li> <li>• As business owner on the AstraZeneca internal projects Route Manager and Reagent Connect, I am responsible for creating their annual roadmaps and ensuring throughout the year that projects are on track and well-matched to resourcing requirements.</li> <li>• I have been responsible for planning chemistry projects for student direct reports – a lab-based PhD student project in Q1 2024 and an undergraduate summer intern project in 2025.</li> <li>• I am regularly involved in organizing conferences – 5 international and 3 UK national chemistry conferences in May 2023–May 2025, including the RSC Heterocyclic and Synthesis Group’s flagship “Grasmere” Lakeland Symposium.</li> </ul>
	<p><i>Supporting comments from mentor/manager:</i></p> <ul style="list-style-type: none"> <li>• Nessa is an expert at planning and organising events and work. This is exemplified by her impressive record in international conference planning and delivery.</li> </ul>

<b>B.4.</b>	<p><a href="#">Contribute to continuous improvement by evaluating work and displaying adaptability.</a></p> <p><i>Evidence:</i></p> <ul style="list-style-type: none"> <li>• I developed a Structural Data File (sdf) materials database for AstraZeneca high-throughput experimentation software, which aggregates, featurizes, and corrects materials from multiple AstraZeneca sources using automated Python scripts. This solution has needed to be iteratively improved over time to match the limitations of the software and for error correction.</li> <li>• One of my roles in co-authoring the multi-institutional collaborative review <a href="#">‘Review of low-cost self-driving laboratories in chemistry and materials science: the “frugal twin” concept’</a>, published in 2024 in Digital Discovery, was to bring sections written by different authors together as if written “in one voice” and to proof-read and error-correct the entire document.</li> </ul> <p><i>Supporting information:</i></p> <ul style="list-style-type: none"> <li>• Through her day to day role, Nessa is leading many initiatives at AZ for the continuous improvement of digitisation, in fact her core role could be consider continuous improvement.</li> </ul>
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<b>C.</b>	<b>Communication and Influencing Skills</b>
<b>C.1.</b>	<p><a href="#">Effectively convey information using both verbal and written forms.</a></p> <p><i>Evidence:</i></p>


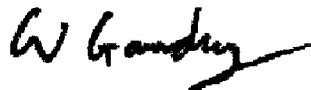
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	<ul style="list-style-type: none"> <li>• I have written regular opinion articles (typically 3 per year) for <i>Chemistry World</i> since 2017. These cover current topics in the world of organic chemistry, particularly around science culture.</li> <li>• I regularly present at both internal and external scientific meetings. Since joining AstraZeneca, I have presented internally to large groups on topics including workflow optimization, our internal ELN upgrade project, and working with users on lab software development. Externally, I have presented 26 seminars between May 2023–May 2025, at events from university departmental seminars to online webinars, RSC conferences, and the American Chemical Society National Meeting. In this time, I have also chaired many conference sessions and webinars on the topics of organic and automation chemistry, for example at the Grasmere conference and the RSC Biological &amp; Medicinal Chemistry Sector (BMCS) “Hot Topics” online webinar.</li> <li>• Since 2023, I have coauthored 4 papers in <i>Org. Process Res. Dev.</i>, <i>Digital Discov.</i>, and <i>Org. Lett.</i>, both from AstraZeneca and previous roles.</li> <li>• I consider data visualization to be one of the most important ways to communicate information in science, and a passion of mine. I typically use Spotfire software to create reports for other scientists, and have learned over the last few years that data visualization is as much about psychology than it is about the actual scientific data themselves. I have improved significantly in my proficiency at data visualization over time and wrote up my learnings in a book chapter, which to my knowledge is the only resource on data visualization for high-throughput chemistry.</li> <li>• I have run three series of department-wide, scientist-targeted training sessions on the use of Spotfire data visualization software, FAIR data, and large language models to upskill scientists in my department and enable them to create effective data visualization and use data to make their work faster and more effective. I have previously trained several scientists on data visualization, both 1-on-1 and in small group settings, with particular emphasis on how to visualize data effectively rather than simply how to use the available tools, which enabled them to improve their presentations to project teams.</li> </ul>
	<p><i>Supporting comments from mentor/manager:</i></p> <ul style="list-style-type: none"> <li>• Her impressive record speaks for itself, and Nessa's evidence for C1 probably sets a new high bar for the quality of evidence! Fantastic and well done.</li> </ul>

<b>C.2.</b>	<p>Consider and respond to alternative views and note the influence this has on your actions</p>
	<p><i>Evidence:</i></p> <ul style="list-style-type: none"> <li>• My work involves coordinating digital transformation across the Pharmaceutical Sciences department at AstraZeneca – 380 people. Sometimes it feels as though every individual in that group has a different opinion! A lot of my work involves canvassing opinions that are often very different and sometimes directly opposing, and then forming balanced plans to push the business and science forwards.</li> <li>• As a member of several small strategy teams, for example in my roles as business owner of Route Manager and Reagent Connect, I regularly take an active role in discussions about strategy and project progression with key stakeholders. In these teams, I actively contribute to managing limited resource and obtain regular user feedback.</li> <li>• At the start of my role at AstraZeneca, I went on gemba walks with all chemistry and analytical teams in my area to understand their pain points and desired improvements in the digital space. These early interactions have proved invaluable throughout my work here.</li> </ul>
	<p><i>Supporting comments from mentor/manager:</i></p> <ul style="list-style-type: none"> <li>• Nessa is open to others opinions and taking them into account. She does this through a range of approaches including: 1:1 feedback discussions; Gemba walks; Voice of the Customer exercises.</li> </ul>

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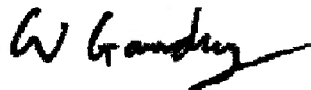
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<b>C.3.</b>	<b>Exert influence in your role either directly or through networks.</b>
	<p><i>Evidence:</i></p> <ul style="list-style-type: none"> <li>• My role as Digital Champion in Pharmaceutical Sciences at AstraZeneca deeply involves matrix communication. The most critical part of my role is to develop digital strategy, particularly in my subsection (ECD). I collected input from across the subsection and produced a roadmap for our digital strategy over the next few years, which was accepted by the ECD leadership team.</li> <li>• I am running upskilling sessions for scientists across AstraZeneca Pharmaceutical Science (380 people) in many digital areas, including managing data, use of artificial intelligence (AI), solvent selection, and data visualization, in line with strategic departmental people goals.</li> <li>• Where I can, I make time to visit other company sites to talk in-person with colleagues. For example, on a visit to the AstraZeneca site in Waltham, USA, I was able to meet casually to talk about AstraZeneca's digital transformation, and gain insights I do not believe I otherwise would have learned.</li> </ul> <p><i>Supporting comments from mentor/manager:</i></p> <ul style="list-style-type: none"> <li>• Nessa influences colleagues actively through training them and providing examples demonstrating the impact of new ways of working and digital approaches. She is an expert networker and her example of having in person catch ups where possible is a great example of soft influencing through a wide global network.</li> </ul>

<b>D.</b>	<b>Professional responsibilities</b>
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<b>D.1.</b>	<b>Make a personal and impactful contribution to ensuring a healthy and safe working environment.</b>
	<p><i>Evidence:</i></p> <ul style="list-style-type: none"> <li>• I regularly consider safety implications of software choices at AstraZeneca Pharm Sci. For example, recently, ensuring an automated explosophoric group checking script would be integrated into an ELN to be used in Pharm Sci.</li> <li>• I have written a Python script that automatically gathers information on hazard and precautionary phrases for materials used in AstraZeneca laboratories. I have used this Python script to allow users to see safety phrases in the upcoming ELN and the high-throughput experimentation software.</li> <li>• I contribute regularly to safety discussions within my team, and have fixed and reported a safety issue I noticed in the labs at AstraZeneca.</li> </ul> <p><i>Supporting comments from mentor/manager:</i></p> <ul style="list-style-type: none"> <li>• Nessa's explosophoric checking script has resulted in a safer department. Previously this activity was down to the individual chemist and was variable due to different levels of experience and training.</li> </ul>


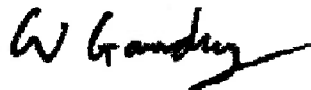
<b>D.2.</b>	<b>Contribute to a sustainable future.</b>
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	<p><i>Evidence:</i></p> <ul style="list-style-type: none"> <li>• Sustainability is of critical importance in process chemistry. I am currently Business Owner on the internal AstraZeneca platform Route Manager, where we are building sustainability calculations (life cycle analysis, process mass intensity) into metrics such that when chemists are deciding between hundreds of potential chemical routes, they can more rapidly understand the sustainability implications.</li> <li>• I work to support both reduction of the amount (ie: increase in overall quality), and physical miniaturization, of wet experimentation performed in AstraZeneca labs. Examples include driving incorporation of user-friendly theoretical models into the AstraZeneca-wide tool Route Manager and support of high-throughput experimentation team from multiple angles including supporting software development and sharing our work publicly.</li> <li>• I coauthored <a href="#">an editorial</a> on 'negative data in data sets for machine learning training' with an aim to improve data quality such that wet lab experimentation can be reduced in volume/increased in quality due to improved machine learning models across the industry. This editorial has been cited 52 times and referenced in multiple conference presentations from other companies.</li> <li>• I wrote a Python script that removes all manual data transfer from LC-MS instruments for the ECD Biocatalysis Team in Cambridge, concomitantly reducing storage space in the sharable folder by 43%.</li> </ul> <p><i>Supporting comments from mentor/manager:</i></p> <ul style="list-style-type: none"> <li>• Nessa, demonstrates strongly how someone in a dry-lab based role can have a sustainability impact. Her examples show, that as someone who cares about the environment, she puts sustainability at the heart of her role.</li> </ul>
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<p><b>D.3.</b></p>	<p><a href="#">Adhere to relevant codes of conduct including the RSC Code of Conduct, relating to fulfilling your duties in the workplace, and apply ethical practice to your role.</a></p> <p><i>Evidence:</i></p> <ul style="list-style-type: none"> <li>• Unfortunately, there have been two incidents of inappropriate behaviour at conferences I have organized in the past 2 years. In the first, I was the first of the organizers to learn of it and reported back to the rest of the committee. On both occasions, we took action to speak with the targeted students and others who had spoken up for them to ensure they were then feeling safer and supported, and to establish next moves. I then liaised with the RSC Inclusion &amp; Diversity team to introduce and socialize a Participant Agreement at future events in this series.</li> <li>• I run a Discord community for chemists learning to code. Although it is overall a supportive community and has clearly-defined rules to treat other members with respect, two incidents contrary to these rules have occurred. In both cases, I personally had to assertively deal with the incidents, which thankfully have not recurred (in one case, the aggressor was banned from the community due to "real-life" harassment of a member). I have appointed three other moderators with extra membership privileges to help with this work.</li> <li>• Honouring inclusivity and the welfare of the chemistry community, from May 2023–May 2025, I have presented four careers seminars (typically covering both my research and my career journey), aimed particularly at students and postdocs.</li> <li>• In November 2023 I was honoured to chair the LGBTQ+ event of the SCI Diversity and Inclusion series where Charlie Wand (University of Exeter) discussed both his research in simulated soft matter systems and his lived experience as a bisexual trans chemist.</li> </ul> <p><i>Supporting comments from mentor/manager:</i></p> <ul style="list-style-type: none"> <li>• Whilst it is disappointing to hear that Nessa has been confronted with situations where the RSCs and AZs code of conduct has not been adhered to she should be applauded for her assertive response. Its great to read of someone actively promoting codes of conduct and challenging transgressions.</li> </ul>
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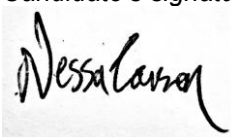
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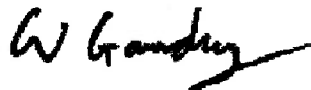
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<b>E.</b>	<b>Supporting the profession</b>
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<b>E.1.</b>	<p><b>Be an active member of the scientific community either at work or outside work.</b></p> <p><i>Evidence:</i></p> <ul style="list-style-type: none"> <li>• I run a website which is aimed to be a repository of useful links for the scientific and particular chemistry community. I started this in 2017 just to learn how to write a website from scratch, but it is now used by chemists around the world. The site includes compilations of links to free organic chemistry learning resources, research tools, resources for high-throughput experimentation, and resources for learning to code. However, the most-accessed page is the Chemistry Conference Database, a regularly-updated list of conferences in the world of chemistry, with pricing and the ability to filter by topic. I recently authored an article on the Chemistry Conference Database and its history in the RSC Chemical Information &amp; Computer Application Group (CICAG) newsletter.</li> <li>• I set up a public Discord server for chemists who code and chemists who wish to learn to code. The aim is to be a community where chemists can talk to each other about their coding journey, ask and answer questions, and suggest ideas. This server currently has 270 members, and I have recruited three co-moderators to help maintain the group.</li> <li>• I also help to moderate a private Discord community for the chemistry community. This was started during the Covid-19 pandemic, and as well as a place for us to talk about science and research, we have a section of channels called 'Hobbies', which is just as popular as the research area and includes separate spaces to talk about music, pets, gaming, and more. Membership is somewhat restricted as we wish it to be a safe space. The server currently has 327 members.</li> <li>• I have organized 8 chemistry conferences between May 2023–May 2025, and am currently helping organize AI in Chemistry 2025 with RSC CICAG.</li> </ul> <p><i>Supporting comments from mentor/manager:</i></p> <ul style="list-style-type: none"> <li>• Nessa makes a huge contribution to the chemistry community and is internationally recognised through her contributions to date.</li> </ul>
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**Declarations and signatures:**

I confirm that I have full documentary evidence in annual appraisal or related documentation to substantiate this summary application form.	
<p><i>Candidate's signature</i></p> 	<p><i>Date:</i> 01 Sep 2025</p>

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