Skills Development Scotland
Collaborative PhD Programme

2022
Foreword

Welcome to the 2022 edition of Skills Development Scotland’s (SDS) Collaborative PhD Programme brochure.

This publication aims to showcase our talented students and the breadth of research they are undertaking, as well as provide essential information for our stakeholders.

This important and exciting venture was established in partnership with the Scottish Graduate School of Social Science (SGSSS) to:

■ strengthen our links with the academic community in Scotland
■ bring fresh thinking to skills policy and delivery in Scotland
■ support new researchers to get a deeper understanding of the unique Scottish skills system.

I am pleased that the PhD Programme continues to attract outstanding doctoral students who can grow personally through their research, while producing academically rigorous and exciting research on important and enduring skills issues from a Scottish point of view.

I am delighted that the Programme has been acknowledged as a ‘demonstrator’ of innovation and best practice in collaborative PhD research. Several organisations in the UK have expressed an interest in replicating the SDS sponsored PhD model. The excellence of our students, the dedication of SDS’s PhD sponsors and the expert input from SGSSS as our key strategic partner are at the heart of this success.

I am also proud that it serves as an essential vehicle to enable us to look at fresh perspectives in skills and learning. As we move out of the pandemic, it has never been more important to explore new ways of thinking about how we can continue to help improve the lives of people across Scotland.

The research plays a crucial role in identifying ongoing trends - translating key insights from our students’ research into lessons for skills policy and practice is of fundamental importance to the Programme. It allows SDS and key stakeholders to respond to the demands and best needs of businesses and individuals, continually fostering innovative approaches and improvements to products and services.

I hope you enjoy learning about our inspiring cohort of students and the key areas they will examine this year in skills policy, skills delivery, and career information, advice and guidance.

Damien Yeates
Chief Executive, Skills Development Scotland
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What is the PhD Programme?

The Skills Development Scotland (SDS) collaborative PhD Programme is a partnership between SDS and the Scottish Graduate School of Social Science (SGSSS). It was established in 2013 to engage the Scottish academic community to support policy-relevant skills research. The focus of the research is to examine key questions in skills policy, skills delivery, and career information, advice and guidance.

The programme produces new research aligned to the evolving skills agenda in Scotland. It also helps to develop a new group of researchers with an in-depth understanding of the unique Scottish skills landscape.

SDS identifies important skills-related topics and works with SGSSS to invite PhD proposals from academic supervisors. SGSSS and SDS then select the most suitable proposals. Up to four sponsored SDS PhD students are enrolled each year, co-funded by SDS and SGSSS.

SDS works closely with the host university, academic supervisors, and the PhD student to support successful completion. Each PhD student has an SDS PhD sponsor who links the student into SDS and the wider skills community. The SDS sponsor also has an important role in promoting the PhD research to relevant SDS teams, ensuring that findings from the research are embedded in the policy and practice of SDS.

The following SDS PhD roadmap provides an outline of the SDS PhD journey, students’ engagement with SDS, and their key milestones and achievements.

A short video has been created by Dr Gabi Lipan, one of our PhD students to find out more about the programme.
The following SDS PhD roadmap provides an outline of the SDS PhD journey, students’ engagement with SDS, and their key milestones and achievements.
The SDS collaborative PhD Programme has a number of benefits for SDS and its stakeholders:

- **£** new investment in high quality skills research, providing a robust and rigorous approach to tackling key skills policy questions

- **increased awareness of the value of academic research within the skills policy community, bringing theory, policy and practice closer together**

- **new opportunities for doctoral candidates to develop their knowledge and understanding within a policy and delivery context**

- **develops the supply of high-quality academic researchers with a deep knowledge of the Scottish skills system and landscape**

- **new opportunities for PhD students to develop their skills and expertise within a workplace setting through PhD internships.**
The Scottish Graduate School of Social Science (SGSSS) is the UK’s largest facilitator of training, funding and support for doctoral students in social science. We work with 16 university partners across Scotland to facilitate world-class PhD research.

As well as developing disciplinary and methodological expertise, world-class PhD researchers make important contributions to our society – helping us to better understand the myriad of challenges that face our world and to develop solutions to navigate these challenges. An important way in which they do that is to work in partnership with those in key policy and practice roles to ensure that research has the best possible chance to make a positive difference to society. The partnership between SGSSS and SDS exemplifies that approach.

Over a period of considerable turbulence, SDS has continued to provide meaningful support to their PhD students. This has included: helping them to develop solutions to conducting research amidst difficult circumstances; ensuring connectedness to their research sponsors and the changing world of policy and practice; and contributing to a sense of belonging when many of us have felt disconnected from our usual supports. Social science students across Scotland have also continued to benefit from excellent SDS internships which provide a rapid means of impacting on organisational and wider outcomes.

Speaking on behalf of SGSSS, we are very grateful to the time and commitment which SDS brings to the social sciences in Scotland and look forward to continued partnership as we move to research and respond to the societal challenges ahead.

Mhairi Mackenzie
Depute Director SGSSS & Professor of Public Policy,
University of Glasgow.
Three Minute Thesis® competition

During the summer of 2021, we held a second successful Three Minute Thesis (3MT®) competition for our PhD students. Entrants provided a three-minute video outlining their research question, approach, and its importance to policy.

The judges were Mhairi Mackenzie, Professor of Public Policy at the University of Glasgow; Dr Scott Hurrell, Senior Lecturer in the Adam Smith Business School, University of Glasgow, and Dr Patrick Watt, Head of Evaluation and Research at Skills Development Scotland.

“The entries for the 2021 competition were very impressive - it’s lovely to see doctoral candidates who are in command of their subject area and able to communicate the importance of their research to a non-specialist audience. There were lots of examples of good communication techniques being used - engaging metaphors, passion and direct eye-contact with the virtual audience. It was also great to see strong entries from those still at Master’s level - demonstrating early ownership of these important research topics.”

Mhairi Mackenzie
Professor of Public Policy, University of Glasgow

“It was a pleasure to be involved with judging these excellent entries that were very engaging, yet also conveyed key messages, to show how socially important these research topics are. The candidates showed a lot of creativity to enable them to communicate clearly with non-expert audiences, to a far greater degree than I could during my doctoral studies!”

Scott Hurrell
Senior Lecturer in the Adam Smith Business School, University of Glasgow

“I was delighted with the standard of entries for this year’s competition. All our students managed to convey the importance of their research for policy and practice – in three minutes each. This ability to communicate complex concepts and ideas to a non-technical audience in a very short space of time will stand them all in good stead in their future careers.”

Patrick Watt
Head of Evaluation and Research at Skills Development Scotland
There were two winners overall in the three categories of People’s Choice Award, PhD Award and Master’s Student Awards

PhD Award and People’s Choice Award
Fanni Tamasi

Master’s Student Award
Marianne Wilson

The entries were of an extremely high standard and the winners can be seen here.

The following quote from Marianne who was our Master’s student award winner for the 3MT testifies to the positive outcomes of this event:

“I was quite hesitant to participate in the 3MT® competition at first, but I am very glad I was persuaded. It was a steep learning curve, but I learned a lot from the process. It was a great way to develop communication skills that have been useful in lots of different contexts. I also found that having to prioritise what could be included in the video really helped me understand my research better.”
Meet our new cohort of students

In October 2021 the PhD Programme welcomed four new PhD students, Aleksander Bielinski, Shayla Bletsoe, Maria Cecil and Martina Lippi. We asked the students about what they are looking forward to most.

Aleksander Bielinski

How artificial intelligence can be used to enhance the provision of labour market intelligence

“I am looking forward to becoming part of a talented and specialised research institute where I can further develop my knowledge on artificial intelligence (AI). My PhD will allow me to utilise my skills and expertise in an important area. My future outcomes include becoming an AI expert, contributing to policy at the national level in Scotland, becoming part of the network of skilled academics and professionals, improving my skills set and being able to conduct my research.”
Shayla Bletsoe

Virtual models of working and the implications for Career Information, Advice and Guidance

“I am looking forward to meeting and collaborating with fellow PhD students as I have been speaking with current students who say that the working culture and support given within the PhD community is amazing! I look forward to being inspired and motivated through others within the PhD community as well as the stakeholders, students and teaching staff including SDS, SSSGS, University of the West of Scotland, University of Glasgow and beyond. Collaboration, partnership working, and relationships/friendships are what keep me strong, inspire me and drive me forward creatively in developing ideas and producing my best work and in being the best I can be in life. I see the PhD as being full of these opportunities to expand on my knowledge and understanding of the world, so that I too may have an impact upon it. It’s also a chance to develop relationships with people and organisations that can help and support me in my goal to make a change. Hopefully I can inspire some others too along the way!”
Maria Cecil

Gendered information landscapes and their impact on routes into and through apprenticeships

“There are so many things I am looking forward to, it’s hard to pick a favourite! I’m really excited about working in collaboration with my supervisors; the research team at Napier; and my sponsors at SDS. I’m also hoping to gain some teaching and marking experience and possibly do an internship in my second year. Mostly I think doing the data collection and getting the opportunity to try out some more creative methods with participants.”
Martina Lippi

Negotiating inclusive early careers and the virtual workplace: diminishing or increasing the disability divide?

“The part of my PhD that I look forward the most is probably seeing my research take shape. I really look forward to working on the project and ‘going into the field’, meeting people and working with them; and working with my supervisors and SDS sponsors. Disability has always been an important aspect of my life and has made me appreciate the value of each other’s differences. I am sure working on this area will teach me even more and will provide me with the opportunity to give back to many people. Ella Fitzgerald once said “It isn’t where you came from. It’s where you’re going that counts.” I believe this quote mirrors my expectations of the PhD: it will be a long journey but once I will reach the end, being aware that my study can make a substantive contribution is the most fulfilling idea about this PhD.”
Meet all our current PhD students

How artificial intelligence can be used to enhance the provision of labour market intelligence

Academic supervisors: Dr David Brazier, Dr Dimitra Gkatzia and Dr Matthew Dutton
SDS sponsor: Katie Killen and Kerry Wilkie

Aleksander is a first-year PhD Computing student, researching how the provision of labour market intelligence data could be enhanced in Scotland using machine learning. He is exploring online job vacancy data to extract information about skills, knowledge, and job characteristics and requirements. The idea is to provide Scottish policymakers, training providers, and job seekers with timely, granular information about the Scottish job market and the underlying trends in skill demand. Later in his research Aleksander is planning to focus on the environmental aspects of the Scottish labour market providing insight about the classification of green jobs and skills. His methodology will merge the traditional machine learning approach with the expertise of labour market experts from SDS to deliver the best recommendations for research audiences.

Virtual models of working and the implications for Career Information, Advice and Guidance

Academic supervisors: Dr Scott Hurrell and Dr Emma Bolger
SDS sponsor: Lorna Stalker

Shayla is currently completing her Master’s year as part of the (1+3) PhD Programme and will commence her PhD in October 2022.

The COVID-19 pandemic has proven unprecedented in accelerating moves to remote working. Not all workers benefit from remote working, however, and disadvantage will likely be experienced by those transitioning from education to work. Disadvantaged groups will need targeted Career Information, Advice and Guidance (CIAG), to ensure they do not face career disadvantage because of remote working catalysed by COVID-19. A mixed-method, multi-stage design will be used to investigate the kinds of interventions needed. The approach will first analyse secondary datasets to establish the extent of remote working disadvantage and which groups are worst affected. The final research focus will be determined after the initial secondary analysis stage but is likely to include in-depth interviews and/or focus groups with people experiencing disadvantage to understand the nature of their experiences and career impediments and interviews with senior CIAG policy makers, to shape findings into recommendations for CIAG delivery and intervention in Scotland.
Gendered information landscapes and their impact on routes into and through apprenticeships

**Academic supervisors:** Dr Ella Taylor-Smith, Professor Sally Smith and Dr Colin Smith  
**SDS sponsor:** April Robertson and Michelle Goldenpenny

Maria is currently completing a Master’s in Science and Technology Studies at the University of Edinburgh as part of the (1+3) PhD Programme and will commence her PhD in October 2022. Maria has previously studied at West Lothian College and Edinburgh Napier University, achieving a BA (Hons) in Business Management in 2020 and a PGDip in Careers Guidance and Development in 2021. Maria’s research will map the information landscapes of young people and examine their impact on routes into and through apprenticeships and work-based learning. Maria is particularly interested in understanding how different sources of gender stereotyping impact on young people’s career choices. The research will use a mixed methods approach to examine the current policy and literature on occupational segregation, and to investigate young people’s situated experience of information related to apprenticeships and work-based learning. Maria hopes to be able to provide accessible outputs which can be used by policy makers and practitioners to help inform future policy and practice on gender equality in careers.

Entrepreneurialism in Work (EiW): Its forms, requisite skills and enabling organisational factors

**Academic supervisors:** Dr Scott Hurrell and Dr Jillian Gordon  
**SDS sponsor:** James Burns

Roisin is a second year PhD student at the University of Glasgow. Before undertaking her PhD, she completed a Master’s in Management as part of the (1+3) PhD Programme, which investigated the Entrepreneurial Ecosystem of the Highlands and Islands of Scotland.

Roisin’s PhD research aims to explore the varying meanings of entrepreneurship in the workplace (EiW), and the skills and traits enabling this within different organisational sectors and settings, in a Scottish context. As EiW is becoming an important source of competitive advantage, researching the facilitating factors of EiW is crucial. Her innovative project links concepts of organisational culture, organisation learning, and Human Resource Management to explore the skills and factors which enable EiW. The practical impact of this research will be far-reaching across all sectors for organisations, informing them of the skills and enabling organisational factors which encourage and advance EiW including the production of ‘good practice’ guides, to benefit policymakers, practitioners and entrepreneurs throughout Scotland and further afield.
Karen is in the final year of her PhD at Heriot Watt University. Her research explores the potential impact of Graduate Apprenticeships on intergenerational social mobility in Scotland. Karen’s focus this year is finalising the collection of primary data from Graduate Apprentices and completing the writing-up stage. Graduate Apprentices have been surveyed and interviewed to find out about their educational and family backgrounds. They have also been asked about their motivation and aspirations. The results of this phase of the research have allowed the creation of a typology for Graduate Apprentices’ motivations to study. For social equity and to ensure Scottish organisations draw from the widest pool of talent available, Graduate Apprenticeships need to appeal to individuals from a range of backgrounds ensuring they represent diversity of gender, race, ability, and social class backgrounds. The research will recommend how information about Graduate Apprenticeships should be provided and disseminated to build awareness among existing and potential stakeholders. It will determine how learners from different social classes, not all of whom may have a family background of degree level study, may be supported to ensure successful completion of this qualification.

Work-based learning (WBL) in the digital age

Stephen completed a Master’s in Business and Management as part of the (1+3) PhD Programme at the University of Strathclyde. Prior to this he completed an undergraduate degree in Business and worked as a Modern Apprenticeship assessor and trainer.

Stephen’s doctoral research focuses on how expert knowledge, skills and learning is changing as a result of technological progress. His research considers what knowledge and skills are required to fully utilise new technologies and aims to understand how expert workers are learning to incorporate these into practice. It is also considering how tasks and activities of expert work are changing as a result of technological advancement and how policy can make WBL an attractive and realistic proposition for all, particularly expert workers.
Creating sustainable communities through the development of skills

**Academic supervisors:** Dr Darren McGuire and Dr Kendra Briken  
**SDS sponsor:** Dr Lynne Robson

Daniela is in the process of writing up her PhD at the University of Strathclyde. Her research has explored the Scottish approach to collaborative working on employability and skills. Specifically, Daniela’s research has identified the strengths and limitations of the Scottish Employability Framework and Strategic Skills Pipeline models in aligning the work of partners in support of collaboration in the delivery of employability services and has identified effective practice and critical success factors in the governance of employability collaborations, as well as how these can be measured.

Models of collaborative working in employability

**Academic supervisors:** Professor Colin Lindsay  
**SDS sponsor:** Dr Patrick Watt

Anya is in the second year of her PhD, focusing on meta-skills, youth transitions and socio-economic status, at the University of Strathclyde. Anya is working to understand the ways in which socio-economic status influences how young people acquire and develop meta-skills. While meta-skills can be gained in many life situations, it is possible that there is a difference in how and why meta-skills are gained, developed, and used between young people of different socio-economic status. As meta-skills are becoming increasingly important in the quickly changing job market, if there are significant differences in how they are obtained and developed by people of differing socio-economic status this could have consequences on an individual’s ability to gain meaningful employment. Fieldwork for this project will mainly focus on interviewing young people aged 16-20 living in Clackmannanshire about the ways in which they have acquired and developed their meta-skills.
Martina is completing her Master’s and will start her PhD in October 2022. Prior to this, she graduated from the University of Glasgow in Business and Management/Social and Public Policy.

Her Master’s dissertation is investigating how neurodiverse employees interact with communication platforms during their working day.

Her PhD research will investigate the impact of the adoption of virtual workplaces in increasing or diminishing the disability divide in employment, especially for early careers. The main aim is to foster the creation of inclusive workplaces and enhance disabled presence in the workforce.

Academic supervisors: Professor Kathleen Riach and Dr Evangelia Demou
SDS sponsor: Ian Bruce and Dr Emma Hollywood

Louise is currently in the second year of her PhD at the University of Stirling. Prior to her PhD, she worked as an Evaluation and Research Graduate Intern for Skills Development Scotland. Throughout the course of her PhD, Louise will examine the barriers to labour market participation for individuals who suffer from long-term health conditions/disabilities and those who provide their unpaid care. The research aims to achieve this through the analysis of three existing, high-quality large-scale social survey datasets, which include Scottish data. Louise’s data analysis will explore how employment outcomes in Scotland are influenced by direct experience of disability/long-term health conditions and as an unpaid carer. This analysis will be compared against current policy initiatives to identify potential areas for improvement.

Academic supervisors: Professor Paul Lambert and Dr Alasdair Rutherford
SDS sponsor: Ian Bruce
Work-based learning environments (WBLE) for fostering industry-relevant skills and optimal economic performance

**Academic supervisors:** Dr. David Haynes and Dr Colin Smith  
**SDS sponsors:** David Coyne

John is currently in the first year of his PhD having completed a Master’s at the University of Edinburgh as part of a 1+3 PhD pathway. John’s research is looking at Work-based Learning Environments (WBLE), exploring the languages and frameworks practiced by industry. An important focus will be on current provision and how WBLEs can be transformed to maximise economic benefits for individuals, firms, and society. Then research will use a mixed methods approach, incorporating a wide-ranging industry survey and extended case studies. John hopes to build a set of tools that will inform decision makers on how to foster productive WBLEs. Specific areas of interest include the impact of Industry 4.0, business maturity and communities of practice.

Career information literacy and decision-making behaviours of young people

**Academic supervisors:** Professor Hazel Hall and Dr Peter Robertson  
**SDS sponsors:** Anthony Standing

Marina is a second year PhD student at the Centre for Social Informatics at Edinburgh Napier University. Prior to commencing her PhD, she completed a Master’s in Science, Technology and Innovation studies at the University of Edinburgh as part of the (1+3) PhD Programme. Marina’s doctoral work focuses on generating new knowledge of young people’s career decision-making and on the identification of means to enhance their career information literacy skills. It will explore the role of information access, use, and evaluation in career development learning and career decision-making processes, to identify specific information literacy skills that can support young people’s career development. The research will implement inquiry into social sources of career information, which have been shown to be highly influential in career decision-making and will explore young people’s responses to career information in different contexts. Research participants will be young people in S2-S6 (aged 12 to 18) who are preparing for their lives beyond school education. Findings and recommendations from the research will have implications for the delivery of career information, advice and guidance.
Labour market outcomes for ethnic minority people in Scotland: Do school subject choices and university choice matter?

Academic supervisors: Dr Marina Shapira and Dr Dave Griffiths  
SDS sponsor: Fergus McMillan and Dr Emma Hollywood

Cara is currently in her second year of her PhD after previously completing a Master’s in Applied Social Research and Social Statistics as part of the (1+3) PhD Programme.

Cara’s research investigates the transitions and labour market outcomes of young people from ethnic minority backgrounds in Scotland. Her research has a key focus on the influence of school subject and university choices on young people’s pathways and outcomes. Her research uses a mixed methods approach with the use of quantitative analysis of secondary data, the Scottish Longitudinal Survey, to investigate the trends in transitions for young people. Data from the Universities and Colleges Admissions Services and the Higher Education Statistics Agency will also be sourced to explore how choices during the secondary school phase can create pathways to future employment for young people. This will be accompanied by qualitative interviews with a sample of young people and Careers Advisers to better understand the relationships behind the decision-making processes of school subject and university choices.

How do employers engage with apprenticeships in Scotland?

Academic supervisors: Professor Melanie Simms and Professor Chris Warhurst  
SDS sponsor: Graeme Hendry and Alison McConnell

Paul is in the second year of his PhD at the University of Glasgow. He holds a BA (Hons) in Sociology and Politics from the University of the West of Scotland, a Master’s in Human Resource Management from Glasgow Caledonian University and a Master’s in Management from the University of Glasgow as part of the (1+3) PhD Programme.

Paul’s research seeks to enhance understanding of how employers engage with apprenticeships across Scotland. The key focus of the research is to examine the decision-making process for employers when they are considering apprenticeship engagement, to develop existing knowledge on what motivates employers to recruit apprentices. It will consider the impact of the Apprenticeship Levy as well as other incentive programmes developed to battle the economic downturn brought on by the COVID-19 pandemic. It is hoped that this insight will help policy discussions going forward as the UK and Scottish governments attempt to ensure that young people have opportunities, even amidst these challenging times.
**Young people’s key influences for transitions into the world of work and the role of careers guidance in Scotland**

**Academic supervisors:** Dr Oscar Valiente and Dr Oscar Odena  
**SDS sponsor:** Andrea Glass

Petri started his PhD studies in 2018 at the University of Glasgow. Prior to starting his PhD, he completed a Master’s as part of the 1+3 studentship programme which examined the key influencers for young adults in choosing to start a Modern Apprenticeship. This topic is being examined further in his PhD research.

Petri finished the data collection last year and is now in the process of finishing the write-up of his thesis. The study is examining not only who influences young adults’ choices, but also how and at what point were different influences important in decision-making. Additionally, the study seeks to find out if Scottish education policy measures regarding school-to-work transitions (such as Developing the Young Workforce) affect young adults’ choices to enter Modern Apprenticeship training. Finally, one key part of the study is to examine how the career services provided in Scotland fit in the mix of influences affecting young adults’ decision-making.

**Supporting the key influencers in young people’s career development**

**Academic supervisors:** Dr Dave Griffiths and Dr Marina Shapira  
**SDS sponsor:** Ken Edwards

Gaile is in the third year of her PhD at the University of Stirling. Before joining the PhD Programme, Gaile graduated with a BA (Hons) in Psychology and Sociology and completed her Master’s in Social Research and Social Statistics as part of the (1+3) PhD Programme.

Her research explores the careers guidance and support networks utilised by young people to inform their options, opportunities, and career paths. This includes the role of family, friends, educational institutions, voluntary organisations, and other potential sources of information. It involves quantitative analysis of British Household Panel Survey and Understanding Society datasets.
Meta-skills maturity for future workplaces

**Academic supervisors:** Professor Hazel Hall and Dr David Brazier  
**SDS sponsor:** Lewis Gale

Katherine is in her third year of an Information PhD at Edinburgh Napier University, having first completed a Master’s in Science, Technology and Innovation Studies at the University of Edinburgh. Her research focuses on meta-skills – those higher-order skills which help people organise and accumulate other skills, such as self-regulation, curiosity, and cognitive resilience. Katherine is using multiple qualitative methods to investigate the measurement and development of these skills in experiential learning environments such as apprenticeships. The primary purpose of the project is to develop tools and practices to ensure that the current and next generations of the Scottish workforce are prepared to adapt and manage their position within the future labour market, with its challenges of automation, socio-political change and multi-job careers.

Technology adoption and skills development in Scottish manufacturing SMEs

**Academic supervisors:** Professor Ronald McQuaid and Dr Belgin Okay-Somerville  
**SDS sponsor:** Leanne Oswell and Denis Donoghue

The overarching aim of Fanni’s PhD research is to understand the impact of new technology adoption on skills requirements in Scottish manufacturing small and medium enterprises (SMEs). The research highlights the need for a more nuanced view on technologies when looking at the impact of technological transformation on organisations and skill requirements, and the need to examine the organisational context when studying this interplay between technology and skills. To have a better understanding on the homogenous effects of different technologies, the study compares the implementation of four types of technologies and their consequent effects on skill requirements in manufacturing SMEs. Overall, the study contributes to discussions on skills development initiatives in the face of Industry 4.0 in the manufacturing sector, with a unique focus on small and medium enterprises. From a policy perspective, the research will identify sectoral best practices and inform current sectoral skills development initiatives on the unique needs of SMEs.
Marianne is in the first year of her PhD studies with Edinburgh Napier University, having completed a Master’s by research in Science and Technology Studies at the University of Edinburgh in October 2021 as part of a 1+3 studentship. The aim of Marianne’s research is to explore how automated dialogue systems could be used to supplement career services for young people. This is a multi-disciplinary collaborative project incorporating understanding the career related tasks that a conversational agent could effectively support; the information required to provide this support; and designing the interaction to meet the needs of young people. A key focus will be ensuring that the system meets the required ethical standards for domain.
Fanni started her PhD in 2019 at the University of Stirling. Her research focuses on the effects of technological change on skills in Scotland.

Before her PhD, Fanni completed a Master’s in Human Resource Management at the University of Strathclyde, while also working as an HR administrator in the retail sector. After two years, her part-time role in the HR office was overtaken by a new software which sparked her interest in how technology transforms the world of work.

After securing her 1+3-year collaborative studentship with SDS, Fanni undertook a Master of Research in Business and Management at the University of Stirling. Her master’s dissertation research studied the automation of the HR clerical role in the retail sector and was awarded the Research Based Learning Prize for the best Master of Research dissertation.

Fanni’s PhD research

New technologies can change all aspects of work organisation – the job tasks, who carries out the tasks, where and how those tasks are performed. All these changes have the potential to alter the skill requirements of the tasks and ultimately, jobs. To cope with the potential changes, workers need to possess and utilise the ‘right’ skills to unlock the benefits of the current wave of technological change. It is important to note that various technologies have different effects on job roles, tasks, and skills. Therefore, to understand the nuances of the manifold changing skill requirements that new technologies can bring, research must closely examine technology adoption in workplaces.

Another crucial factor in the interplay between technology and skills is the organisational context in which these changes happen. The research studies technology adoption and skills development in Scottish manufacturing SMEs. SMEs play a pivotal role in Scotland’s economy. Nevertheless, the Scottish Government identified SMEs as hesitant actors in adopting technological innovation and developing digital skills for its workforce. To best support them, it is vital to understand the issues that these organisations face when adopting new technologies and developing skills.

The key objectives of the research are:

1. To highlight the varying effects of different technologies on skill requirements in Scottish manufacturing SMEs.
2. To understand the effects of the organisational context on technology adoption and skills development.

Overall, the study contributes to discussions on skills development initiatives in the face of Industry 4.0 in the manufacturing sector, with a focus on SMEs. From a policy perspective, the research will identify sectoral best practices and inform current sectoral skills development initiatives on the unique needs of small and medium enterprises, to encourage technological uptake in Scottish manufacturing SMEs.
Research method

Fanni’s research involves multiple case studies with manufacturing SMEs, who recently adopted new technologies. The case studies cover the automation journey of a brewery; the adoption of an Enterprise Resource Planning system; the development of a new record keeping system; and the introduction of an automated tool setter in an engineering company in the aerospace sector.

The case studies include interviews and site visits. Each case study covers the drivers behind technology adoption; the consequent changes on tasks and skill requirements in the organisation; and the related training and skills development in SMEs. These topics are discussed with the owner-managers of the case study organisations; managers; workers whose job was directly or indirectly affected by the technology implementation; and representatives from the technology companies that the case organisations purchased their equipment from. The research also includes interviews with relevant external stakeholders in the sector who provide a useful overview of the sector’s health; the support available for organisations; and their view on collaboration with SMEs in the sector.

Fanni has nearly finished her data collection and will spend the final year of her PhD analysing her data and finish writing-up at the end of 2022. Fanni hopes to submit her thesis in January 2023.

PhD internship

During her second year, Fanni joined SDS in May 2021 remotely from Hungary, to undertake an PhD internship with the Evidence & Impact team.

The internship involved the review and update of the High Performing, Inclusive and Sustainable Labour Market (HPISLM) model, which is part of SDS’s Strategic, Accessible Labour Market Intelligence offerings.

The internship offered a great opportunity for Fanni to experience working with SDS, providing a different environment from PhD study. Working on the HPISLM model, Fanni gained experience in applying her Human Resource Management background and working on a shorter-term project outside of academia. Beside developing her presentation skills and data analysis skills, Fanni made valuable connections and gained valuable experience during her time with SDS, returning to her PhD studies in August 2021. Conveniently, the 3 Minutes Thesis® competition gave the perfect opportunity to dive right back into her PhD topic, and Fanni won the best PhD prize and ‘people’s choice’ award.
SDS Sponsor spotlight

The centrepiece of the programme is our network of our PhD sponsors who have a vital role in supporting students to connect with the policy world and in sharing learning from the research throughout SDS.

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**SDS sponsor:** Andrea Glass  
**PhD Student:** Petri Simonen

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**Young people’s key influences for transition into the world of work and the role of careers guidance in Scotland.**

I am the SDS sponsor for Petri Simonen, who is in the very final stages of writing up. His research focuses on young people who are undertaking Modern Apprenticeships. He is looking to understand who influences young people, at what point these influencers are important and how they affect the decisions young people make.

Prior to joining SDS I was an academic at the University of Glasgow and had thought that my days of students ‘knocking on my door’ were sadly over. I was therefore delighted to be given the opportunity to support a PhD student from a practitioner rather than the academic perspective.

Taking on the role of a PhD sponsor is very rewarding. It has provided me with opportunities to engage in stimulating discussion, challenge my own assumptions, reflect on exciting findings as they emerge, and help Petri to navigate the complexities of the Scottish skills landscape. I have also been able to offer practical advice and, with the help of colleagues, facilitate access to Modern Apprentices, which was particularly challenging during the COVID-19 pandemic.

For me, being a part of the PhD programme underlines the very significant value of applied research, for the student, sponsor and SDS. This is research that is academically rigorous but also provides insight that can directly inform the development of policy, products, and services. We all see things from different perspectives, and it is these multiple perspectives that help to shape the result.

SDS is a people-based organisation and sponsorship is an excellent way to support an individual PhD student, enhance your own learning and development and ultimately to contribute to improving the opportunities for the people of Scotland. Being a PhD sponsor comes highly recommended!
SDS PhD Internships

SDS also works in partnership with SGSSS to offer internship opportunities to students undertaking a PhD within a SGSSS member institution in Scotland. PhD internships provide work-based experience outside of the students’ topic areas at a level appropriate to PhD research. They support the development of transferable skills, enhance employability, and provide the student with experience of working in research in a non-academic setting.

To date, SDS has provided 14 PhD internships across a variety of SDS teams.

A closer look at... Cara’s Internship

Before starting my PhD internship at Skills Development Scotland, I had recently completed the first year of my PhD. My PhD research looks at the transitions and labour market outcomes of young people from minority ethnic backgrounds in Scotland, by looking at their educational choices. The internship came at the perfect time as it allowed me to take everything I had learnt in my first year and apply it in a new, exciting environment which had a more policy focus compared to the academic one I was used to.

I have always had a keen interest in conducting research in different research environments, particularly those that are policy focused, and my internship at SDS gave me great insight as to how research is conducted within an organisation. Policy impact is always something discussed when conducting research as a PhD student but having that experience first-hand helped bridge a gap between the two.

For my internship I was based in the SDS Evaluation and Research team, and I had the opportunity to work on a project exploring the impact of equality characteristics on young people’s career choices and journeys. Using three SDS datasets I explored the trends and patterns across the data looking for key influences on young people’s career choices. It was great to have the chance to work on a project that was similar to my PhD and own research interests as it offered the chance to engage with new perspectives and areas of interest which I could take with me back to the university. Additionally, the encouragement and feedback I received throughout the project was so helpful for the development of the project and myself as a researcher.

When joining SDS, I immediately felt welcomed and made to feel part of the Evaluation and Research team, making the transition from a university environment to an organisational one a lot easier. The faster pace, and collaborative environment was one I was not used to as a student but something I thoroughly enjoyed. Each day was different which only made the research experience more interesting.

The skills I developed from the internship were incredibly valuable and has allowed me to adapt to how I approach my own research. Overall, the support and encouragement I received from SDS was fantastic and having the opportunity to work on projects similar to my research interests in a different kind of research environment allowed for a completely different but beneficial research experience. The internship helped me gain a great deal of confidence in myself and my abilities as a researcher. My experience was such a positive one, for which I cannot thank SDS enough, and I encourage anyone who is considering an internship with the organisation to get involved.
SDS PhD events and networking

SDS provides a rich and varied programme of activities and support for its PhD students to support dissemination of their research and for networking with other PhD students. A key strength of the SDS PhD Programme is its strong links with policy and practice. The Programme aims not only to support innovative research on skills and learning, but to feed this research back into an applied setting and to help promote real-world impact. SDS supports a variety of opportunities for its PhD students to network and to disseminate and discuss their research with SDS stakeholders throughout their PhD journey.

Student welcome events

All new students are invited to attend an SDS welcome and induction event. This event introduces the SDS PhD Programme; provides an opportunity for new students to meet with their SDS sponsor, the SGSSS, the other new students, the SDS PhD team and their PhD student buddy; and generally help them to settle in.

Master’s events

PhD students who start at the master’s stage are invited to attend a meeting with SDS staff and present the findings of their dissertation and outline the plans for their PhD. Marina talks about the value of this events for PhD students.

“These events are invaluable opportunities to connect with students, career practitioners, and policymakers with similar interests, and to fuse together research evidence, policy and practice. I enjoyed presenting my dissertation work to SDS at the end of my Master’s year - I received some great feedback on my work and gained insight into the many moving parts of career guidance that I then took forward into my PhD!”

Marina Milosheva
PhD student

SDS PhD student seminars

SDS runs a series of student seminars for SDS PhD students. These provide a safe and productive space in which students can share their initial research and findings with peers and SDS colleagues and receive constructive and supportive feedback. Student seminars have taken place online since March 2020.

“The seminars are an amazing opportunity to both share knowledge and to engage with other people within SDS. I have gained new insights and inspiration from watching other PhD students’ presentations. Additionally, by having staff from all over SDS engage in our work, students are able to make connections that can potentially further our research. Presenting for SDS was a wonderful, nurturing experience and I am looking forward to seeing what next year’s cohort produces!”

Anya Kaufman
PhD student
PhD insight events

These events are organised nearer the end of the student’s PhD and provide an opportunity for the student to meet with senior SDS staff to discuss the implications of their research for skills policy and practice. Students produce an end of PhD report with support from their SDS sponsor outlining the main findings of the research and any policy recommendations. SDS then circulates the PhD findings and insights across SDS through a PhD research summary for each topic.

Wider networking/dissemination events

The SDS PhD team also organises wider networking events attended by a range of skills policy stakeholders and interested academics to help students disseminate their research and get feedback from a much larger audience. The most notable gathering is our annual PhD networking event which usually takes place in spring. It has been postponed due to COVID-19, but we are looking forward to a face-to-face event later in 2022/23.

Three Minute Thesis® competition

This annual online event in the SDS calendar gives all our PhD students the opportunity to present their research in an innovative and engaging way to a wide audience. Students said they find it ‘useful to present to a group of non-academics’ and like the SDS 3MT® because it’s ‘fun and different ... challenging but brilliant when done’.
Meet our alumni

This section profiles the following students who have successfully completed the collaborative PhD Programme and have either graduated or are waiting to graduate following a successful viva examination. Viva is short for “viva voce” which means “by or with the living voice” and is where PhD candidates must give a verbal defence of their research thesis. Having successfully defended their thesis at a viva voce examination they will earn the title Doctor. Most recently, Dr Gabi Lipan has joined the SDS alumni community.

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<tr>
<th>Name</th>
<th>PhD title</th>
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<tr>
<td>Dr Mark Egan</td>
<td>Childhood psychological predictors of unemployment: evidence from four cohort studies</td>
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<td>Dr John Evans</td>
<td>Shaping apprenticeships: strategic actors in skill ecosystems</td>
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<td>Dr Magdalena Gilek</td>
<td>The impact of job quality on mental health among young workers in the UK</td>
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<tr>
<td>Dr Gabi Lipan</td>
<td>Mind the GAP: an investigation into the factors influencing student, academic and employer perceptions of graduate attributes</td>
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<td>Dr Alana McGuire</td>
<td>The impact of big data on skills requirements</td>
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<td>Dr Lyndsey Middleton</td>
<td>Exploring the development of innovative work behaviour of employees in multiple workplace contexts</td>
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<td>Dr John Mowbray</td>
<td>The role of networking and social media tools during job search: an information behaviour perspective</td>
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<td>Dr Kane Needham</td>
<td>The role of social networking sites in career management</td>
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<tr>
<td>Dr Bozena Wielgoszewska</td>
<td>Understanding University graduates’ social mobility trajectories: how does the route affect the outcome?</td>
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Mark’s research examined how certain non-cognitive skills (e.g. self-control) and different levels of mental health in early life predict future unemployment. His research used British and American data from four cohort studies to examine how later unemployment was affected by childhood capacity for self-control. The research found that self-control, conscientiousness, and mental health all play a role in future unemployment and that children with poor self-control were more likely than more self-controlled children to experience unemployment during the UK’s 1980 recession and the US’s 2007 recession.

Mark Graduated in 2017 and currently works as a Senior Research Advisor for the Behavioural Insights Team in London.

John’s research considered the power relations between strategic actors and their repercussions for the shape and direction of apprenticeships. The research adopted a comparative case study design looking at engineering apprenticeships in Scotland and England, using an adapted ‘skill ecosystem’ lens to dig deep into actor power in skills systems. His research increased understanding of the division of labour between actors in the context of apprenticeships, analysing roles, interests, and relative power to shape skills.

John graduated in 2020 and now works at the Migration Advisory Committee (MAC) as the Head of Devolved Nations.
Gabi was the SDS PhD Programme’s first 1+3 student. He completed his Master’s at the University of Aberdeen and submitted his PhD in 2021. Gabi started his PhD by investigating the factors influencing student, academic and employer perceptions of graduate attributes. He then moved on to creating a universal model of graduate attributes and validating this model with stakeholder input. After the “7i Model” of graduate attributes was finished, Gabi’s final PhD year was dedicated to the assessment of them. Applying methods used in high-risk industries such as aviation, Gabi created a behavioural markers system that can be used to assess and give feedback on observable ‘easy to see’ attributes. This will enable the assessment of graduate attributes that could not be assessed through traditional written assessments or exams (e.g. teamwork). As graduate attributes and meta-skills are inter-related, this approach can be adapted to the SDS meta-skills model. In addition to his academic work, Gabi has completed a PhD internship with SDS and is regularly in touch with SDS to present his findings and discuss their practical implications with key colleagues in the organisation. Since finishing his PhD, Gabi has been working as a Data Literacy Coach at Multiverse, where they are building an outstanding alternative to university and corporate training via professional apprenticeships.

Magdalena’s research examined job quality and mental health among young workers in four European countries. The study used large-scale European surveys to investigate how young workers evaluate the quality of their jobs in the context of the contemporary labour market. It considered the most significant factors that enable or challenge young adults in achieving or sustaining a high quality of working life, and the impact of job quality on their mental health. Magdalena’s research makes an important contribution to understanding three key areas of job quality: its components, predicting factors, and outcomes. She produced new research findings on the impact of ‘job fit’ in terms of both skills and hours on young people’s mental health (measured by exhaustion, stress and fatigue) and on the mediating impact of perceived employability.

Magdalena graduated in 2020 and currently works as a lecturer in HRM and Organisational Behaviour at Edinburgh Napier University.
Alana’s research looked at the ways in which rapid advances in information technology and the emergence of Big Data are changing the nature of employer demand for skills and the pace at which skills supply needs to change to enable employers to remain competitive. The research also explored the barriers facing employers in responding to the need to develop skills in working with Big Data and considered whether there was evidence of social, gender, and ethnic inequalities in the distribution of Big Data skills. Key findings included the need to see the value of data, improving skills and training and finding solutions to personal data storage, particularly around trust in cloud storage.

Alana passed her viva in 2021 and now works at Skills Development Scotland as a Skills Planning Executive.

Lyndsey’s research explored the informational, contextual and individual factors that enhance and inhibit the development of innovative work behaviour. A main output of her research was the development of a framework to explain how organisations can improve innovative work behaviour. The research draws upon aspects of information behaviour and use, organisational culture, and strategy as part of the framework development to provide a series of recommendations to practitioners.

Lyndsey graduated in 2020 and currently works as a Senior Assistant Statistician in the National Performance Framework Evidence and Reporting Team at the Scottish Government.
John’s research investigated job search networking amongst 16 to 24-year-olds living in Scotland. John explored the role of social media platforms in job search through interviews, focus groups and a survey. John’s research found that frequent networking both offline and on social media is associated with positive job search outcomes – especially with family networking and use of Facebook for job searching. However, contextual factors including demographics can influence this. Furthermore, it was found that young people face multiple barriers to networking and so do not always utilise their networks effectively. Through John’s engagement with SDS, he has used his findings to create a detailed list of recommendations for practitioners.

John graduated in 2018 and currently works as a Research Officer with the Scottish Government.

Kane’s PhD explored the role of social networking sites (SNS) and the wider internet as a revolutionary platform for career management. He analysed large-scale survey data to map internet and SNS usage by demographic characteristics for a range of social groups and conducted in-depth case studies to look more closely at how productive use of the internet and SNS are for gaining employment. Kane’s study also considered the extent to which the internet can be used productively as a tool to enhance skills and opportunity for everyone, whether it mitigates traditional labour market barriers or creates a ‘second-level digital divide’ and uneven distribution of digital skills. In addition, Kane looked at the role of social capital and at the continuing relevance of informal methods of finding work, such as through a personal contact.

Kane graduated in 2019 and currently works as a Research Fellow at University College London.
Bozena’s research examined the relationships between individuals’ work histories and their social mobility trajectories, accounting for several additional characteristics. Her research used a sample of over 1,000 graduates from the 1970 British Cohort Study to reconstruct their economic histories before deploying sequence analysis to derive a typology of graduates’ progression through social classes, and a typology of career pathways. It was found that a relationship exists between career type and social mobility trajectories, however additional factors (such as social, geographical and individual attributes, internal migration trajectories and higher education) also play a role. Bozena’s research shows that career type is the missing link in contemporary social mobility research.

Bozena graduated in 2019 and currently works as a Research Associate at Social Research Institute, University College London, dividing her time between the Centre for Longitudinal Studies and Quantitative Social Science.
Looking forward to...

**Student seminar series**

The seminar series enables SDS PhD students to share their research and ideas with other PhD students and SDS colleagues. We have at least four seminars each academic year. Since March 2020 these have been delivered online. For 2022/23 we hope to have a mixture of online and face-to-face seminars.

**Annual Networking Event**

With the removal of restrictions, we are looking forward to hosting a face-to-face Annual Networking Event in 2022/23.

**Continuing to disseminate and innovate**

The PhD Programme is now firmly established, and our cohort of excellent PhD students have produced a significant body of high-quality, valuable academic research on the Scottish skills system. This year we will be reflecting on what we have learnt so far by looking thematically across our PhDs and drawing these findings together. The initial focus for this will be on Career Information Advice and Guidance.

**New PhD topics awarded**

Three exciting new PhD topics will start in October 2022:

- The economic benefits of work-based learning and Foundation Apprenticeships. University of Glasgow, primary supervisor Dr Queralt Capsada-Munsech.
- Transformative skills in the energy Just Transition: mixed-methods pathways for upskilling, reskilling and engaging new entrants in Scotland. University of Edinburgh, primary supervisor Dr Kirsten Jenkins.
- Toward a strategy for improving labour market outcomes for care experienced young people. University of Glasgow, primary supervisor Dr David Lundie.

We are looking forward to the new students starting in October 2022.
Meet the PhD impact and insight team

Based in the SDS Evaluation and Research team, the PhD Impact and Insight team support the delivery of the SDS collaborative PhD Programme and are also responsible for equality, diversity and inclusion research across SDS. In delivery of the PhD Programme, we work closely with our students, academic supervisors, SDS sponsors and the SGSSS to ensure the success of our collaborative approach. We organise events including the annual networking event, student seminar series and the 3MT® competition. We support our sponsor and student networks, organise PhD internships in SDS, and assist in the development of new PhD topics and in the recruitment of new students. The team is also committed to supporting young talent by having a Graduate Intern who supports the PhD Programme. You can visit our website or contact us. For more information about our PhD Programme, or any of the students’ areas of research, please email us at phd@sds.co.uk

Rosie McCready has been an integral part of the SDS PhD Programme since 2013. Much of the success and influence of the Programme is down to Rosie’s hard work and insights over the years. Rosie retired from SDS in April 2022, but we look forward to welcoming her back to all our PhD events in the coming years.

Dr Emma Hollywood
Insight and Impact Manager

Pooja Marwaha
Evaluation & Research Coordinator

Rachel O’Hare
Evaluation and Research Graduate Apprentice
For more information about our PhD Programme or if you would like information about any of the students’ areas of research please feel free to email us.

PhD@sds.co.uk