careers and training **in the food and drink sector**

Chilled Education's store cupboard science experiments

In September 2011 the Chilled Food Association (CFA) launched its Chilled Education (CEd) initiative to inspire the next generation of chilled food scientists.

Over the decade it has worked with industry and education specialists to raise awareness of careers in the chilled food industry amongst teachers and students. Its original mission – to address the skills gap in the sector – remains as important as ever as businesses strive to recruit and retain a high calibre workforce.

Since launching, thousands of teachers and students have benefitted from innovative resources, industry insights and practical support from a team drawn from CFA member companies. The diverse range of resources produced, ranging from lesson plans, 'real-life' career paths and case studies to newsletters and videos, coupled with engagement with teachers and students at career and science fairs including through our CEd STEM Ambassadors, has proved to be a successful formula.

Home working

Careers and science fairs play a key role in delivering CEd's work. Over the years students and teachers have tested their handwashing skills, learnt about correct fridge temperatures and challenged their food microbiology knowledge at CEd exhibition stands. However, when COVID-19 halted such events, a change of approach was needed.

With schools closed for many students, emphasis switched to home working. In response to the need for fun, low budget lesson ideas, CEd tried, tested and shared a suite of food science experiments using everyday items found in most store cupboards.

The first Store Cupboard Science experiments covered principles of miscibility, air pressure and endothermic reaction – using oil and water, marshmallows and flying saucer sweets, respectively. They were demonstrated by keen young scientists Morgan and Tilly whose involvement continues through more than 50 subsequent experiments. At Halloween they explored enzymes to make spooky slime and experimented with UV lights to create glowing liquids. A twelve-day Christmas series of experiments included making bioplastic decorations from milk, showing the chemical reactions behind a bath bomb and looking at the bubbles in honeycomb.

Karin Goodburn MBE, CFA Director General, comments: *'We wanted to continue to provide useful, imaginative and inspirational resources but knew that during the lockdowns, access to materials would be almost impossible. So, we looked into our own store cupboards to develop the ideas. We also tested some of the many existing food science experiments, showed people how they work and posted them on our website.*

'Having Morgan and Tilly demonstrate the ideas made them more relatable to the primary school audience we were targeting although they are also of interest to other age groups. With some of the experiments requiring 'grown up' involvement, the adults will also have, hopefully, gained some useful insights into the science behind the food on our plates!'

CEd also responded to the heightened interest in good hand hygiene to stop the spread of COVID-19 by making its popular hand wash training posters available as a free download from its website. Once again Morgan and Tilly got involved, demonstrating the correct way to clean hands on the CEd website. Using edible glitter and cooking oil they tested different approaches – warm vs cold water and hand gel vs soap.

CEd's long term collaborator Chartered Science Teacher Sam Holyman also developed content for Store Cupboard Science. Demonstrating, with her daughter Annie, the science behind runny and crystalised honey. Annie also investigated the iron in breakfast cereals.

Gill Harrison explains how to keep the learning fun during lockdown and beyond.

Positive feedback

The response to the experiments has been positive. Karin explains *'We promoted our ideas on our social*

Tilly handwashing

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Morgan experimenting with edible slime

media channels and with thousands of colleagues on the Food Teachers Centre Facebook group. We're also delighted to have been chosen as the FDF's 2021 Education Initiative of the Year, which took account of the adaptations we made during lockdown. Like many organisations we're finding our new ways of working have proved to be effective, so we will definitely continue with virtual elements in our work. But we also look forward to once again sharing expertise and ideas face-to-face in the future. Meanwhile we encourage everyone to join us via our website for more fun food science ideas.'

Article available online at **onlinelibrary.wiley.com/doi/10.1002/fsat.3504_18.x**

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email gill.harrison@chilledfood.org

web **chillededucation.org** hosts all the information including details for how to become a CEd STEM Ambassador

See chilledfood.org for information on the chilled food sector and CFA's activities

Stepping stone for young scientists

Shimadzu's lab4you programme, now in its 7th year, is aimed at young scientists from all over Europe. They can apply for laboratory space to carry out measurements supporting their research for a thesis or dissertation. The programme is open to candidates working on research topics across a wide spectrum of fields ranging from food and beverage applications to new methods for therapeutic drug monitoring.

The lab4you programme is affiliated with the Shimadzu European Innovation Center (EUIC). Together with universities across Europe, the EUIC examines new analytical solutions for tomorrow, such as analytical methods, tools, techniques and software solutions.

The state-of-the-art 'Shimadzu Laboratory World' at the European headquarters in Duisburg, Germany provides the latest generation of analytical instruments guaranteeing high quality analytical results. The instrumentation includes: HPLC/UHPLC, SFC and GC as well as mass spectrometry, MALDI, spectroscopy (UV, IR, FTIR, ICP) and material testing technology.

Over the past six years, Shimadzu has hosted candidates from Austria, Poland and Germany to conduct their research in the company's Laboratory World. Former successful candidates have found the opportunity very beneficial:

Carola Schultz *PhD student at the University of Muenster, Germany*

'The lab4you programme gave me a unique opportunity to carry out my research using the equipment available in Shimadzu's Laboratory World. I was able to work independently; there were no preconditions so I could make all decisions by myself. This had a positive effect on my research, but also required very careful project planning beforehand'. After finishing her PhD, Carola returned to Shimadzu to join the team as a product specialist.

Lisa Emhofer *Institute of Analytical Chemistry at the Johannes Kepler University in Linz, Austria*

'After intensive training on the equipment by the very helpful product specialists, I could focus totally on my research topic and use all the equipment of the Laboratory World. I was always encouraged and supported in the implementation of new ideas that emerged during my research stay.'

Registration

Registration for next year opens in May 2022. Interested scientists can apply with a short abstract of their research work in English. Laboratory space will be available for the duration of the research project. Requirements for participation in the lab4you programme are a degree in the natural sciences, an inspiring research topic and

***Workspace** in the 'Shimadzu Laboratory World'*

prior knowledge of analytical technology. The programme is aimed at Master's and Doctoral students as well as post-docs from all scientific fields in which analytical instrumentation or materials testing technology play a role. An internal jury will select the successful applicant for laboratory space.

Article available online at **onlinelibrary.wiley.com/doi/10.1002/fsat.3504_19.x**

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Shimadzu offers interested universities a selection of promotional materials to display or distribute to potential participants.