

Chemistry Update

Newsletter 308, 26 April 2019

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Calendar of Events

RSC Joseph Chatt Award Winner Seminar

Speaker: Dr Nick Le Brun,
University of East Anglia
Date: Wednesday 1 May
Time: 1pm—2pm
Location: C/A101

Departmental Joint Research / Equality and Diversity Seminar

Speaker: Prof Polly Arnold,
University of Edinburgh
Date: Friday 3 May
Time: 1pm—2pm
Location: C/B102
Followed by refreshments in C/B101

Green, Physical, Biological & Materials Chemistry Seminar

Speaker: Dr Yoshiharu Nishiyama,
CERMAV, CNRS
Date: Tuesday 7 May
Time: 1.30pm—2.30pm
Location: C/F106

Organic Seminar

Speaker: Prof Frank Glorius,
University of Münster
Date: Wednesday 8 May
Time: 4.30pm—5.30pm
Location: C/B102

Chemical Interactions Film Screening: Hidden Figures

Date: Thursday 9 May
Time: 3pm—5.30pm
Location: C/A101

Chemistry Education Seminar

Speaker: Prof Renee Cole,
University of Iowa
Date: Tuesday 14 May
Time: 1pm—2pm
Location: C/B101

Organic Seminar

Speaker: Prof Matt Sigman,
University of Utah
Date: Tuesday 14 May
Time: 3pm—4pm
Location: C/B101

Chemistry Education Seminar

Speaker: Dr Christopher Thompson,
Monash University
Date: Wednesday 15 May
Time: 1pm—2pm
Location: C/A122

BPSI Spring Symposium 2019

Speakers: Prof Steve Meech,
University of East Anglia;
Dr Alex Jones, National Physical
Laboratory & Dr Helen Bryant,
University of Sheffield
Date: Wednesday 29 May
Time: 12pm—6pm
Location: Dame Dianna Bowles
Lecture Theatre (B/K018)

Date of Next Issue:
31 May 2019

Prof Lucy Carpenter elected a Fellow of the Royal Society

Professor Lucy Carpenter, of York's Department of Chemistry, has been elected a Fellow of the Royal Society, the oldest scientific academy in continuous existence.



[Professor Carpenter](#) conducts world-leading research on the emissions, chemistry and impact of processes occurring in the atmosphere above the world's oceans.

Eminent

The Royal Society is a fellowship of many of the world's most eminent scientists, engineers and technologists. It has a history stretching back to the 1660s and elects up to 52 Fellows and ten foreign members every year.

Professor Carpenter uses a combination of field observations, laboratory studies and theoretical modelling to answer important questions about global climate change. Her work is informing global policy to repair the ozone hole.

Honoured

She said: "I'm hugely honoured and happy to be elected a Fellow of the Royal Society, as well as surprised. Of course, a successful research career relies as much or more on collaboration, support and friendship from colleagues as it does on the individual, and I'm lucky to have experienced a lot of that in my life as an academic.

"I'd like to thank those who proposed me for the fellowship, and the students and colleagues who have worked with me over the last 20 years or so."

Tribute

Professor Duncan Bruce, Head of the Department of Chemistry at York, paid tribute to his colleague: "Lucy has carried out work in atmospheric chemistry that has important and far-reaching implications, and I am delighted to see her recognised by election as a Fellow of the Royal Society. Well done Lucy."

Professor Deborah Smith, Pro-Vice-Chancellor for Research, added: "Lucy Carpenter is an exemplary scientist who has carried out excellent work of the highest international standing and with real impact in the world. She is also an outstanding colleague and inspirational mentor to staff and students alike. York is proud of her many achievements - Lucy is a genuine role model of the highest calibre for those who follow her."

New starters

James Rossi-Ashton, Research Associate with Dr Will Unsworth
Room: C/D211 & C/D217; Ext: 2520; Email: james.rossiashton@york.ac.uk



European Research Council Advanced Grant Success

Professor Lucy Carpenter has been awarded £2m to study how ozone in the lower atmosphere interacts with the sea's surface from the prestigious Advanced Grant Fund of the European Research Council (ERC).



The grant will support a highly interdisciplinary study, involving aspects of both physical and atmospheric chemistry, ocean chemistry and physics, and engineering.

[Professor Carpenter](#), who helps lead the [Wolfson Atmospheric Chemistry Laboratories](#), explains:

"Tropospheric ozone (O_3) is a significant climate gas and it has a major influence on air quality, public health, food security and our ecosystem's viability.

"We estimate that deposition of O_3 on the Earth's surface accounts for around a third of overall tropospheric O_3 removal; however, we're much less certain about losses to the ocean surface, or the effect this has."

The project will explore the fundamental mechanics involved in the loss of O_3 both on and in the ocean surface, as well as the subsequent production of trace gases.

Professor Carpenter says: "The overall objective is to unify observations of the ocean surface from above, within and below, offering insight into this complex yet sparsely studied interface and applying this knowledge to our global understanding of the atmosphere."

The latest round of ERC grants totalled €540M. [ERC Advanced Grants](#) can be awarded to top scientifically-independent researchers of any nationality or age. Recipients must be exceptional leaders in terms of originality and significance of their research contributions.

Professor James Clark gives international lectures



Professor James Clark gave a public lecture in Doha (Qatar) on "From waste to wealth using green chemistry". Qatar hosts the next World Cup and wants it to be the first to be "zero carbon"! The small country is changing rapidly both to accommodate new stadia and hotels for the event but also to start moving away from an economy almost entirely dependent on selling hydrocarbons. It was particularly interesting to see the emerging agriculture sector taking advantage of a massive desalination programme.

James also gave the Keynote lecture at the University of Melbourne's symposium on crop waste. Australia is another country looking to a "greener future" based on an increasing use of renewable resources. They have the advantage of already having a very large but not very efficient agriculture sector with vegetable waste alone exceeding a million tonnes.

Enterprise Fellowship Success

A researcher from the Department of Chemistry has been awarded a fellowship to help translate his work into a potential business idea.



[The York Enterprise Fellowships](#) enable talented researchers to spend a year, fully funded, developing their research in close collaboration with organisations interested in the translational, and potentially commercial, application of their ideas.

[Dr James Comerford](#), postdoctoral researcher in the [Green Chemistry Centre of Excellence \(GCCE\)](#), has received one of these fellowships to help address the global problems caused by plastic pollution. Residual additives in plastics such as dyes, pigments, flame retardants, and contamination in plastic waste cause serious complications in the recycling process, dramatically limiting the quality and application of the subsequent end products.

Dr Comerford will be developing Addible, a unique research service to support plastic recycling in samples where additives are present.

Addible will use computer modelling to identify sustainable formulations able to extract problem additives from plastics so they can be recycled.

As part of the Enterprise Fellowship scheme, Dr Comerford will receive one-to-one expert mentoring and around £15,000 to support and progress his ideas. He will take part in a series of courses on business and finance, customer engagement, users and branding, and leadership. His fellowship has been supported through philanthropic donation by alumni Bryan and Lydia Gray.

Talking about the 2019 Enterprise Fellowship scheme, Professor Jon Timmis, Pro-Vice-Chancellor for Partnerships and Knowledge Exchange said:

“The 2019 Fellows fought off stiff competition and are developing some potentially life changing ideas and products that can benefit societal health, wellbeing, the environment and economy. We are proud to be able to support them and their work in this way.”

Times Higher Education (THE) Awards



The [Times Higher Education \(THE\) Awards](#) are now open for nominations, including the new *Outstanding Technician of the Year* category. Nominations are open until 5 June.

If you would like to nominate a member of technical staff, please contact technician-commitment@york.ac.uk

Dr Glenn Hurst gives invited talk at York St John

On 5 April 2019, Dr Glenn Hurst gave an invited talk at York St John University as part of a symposium on using Twitter and other social media platforms to enhance teaching and learning. After Glenn delivered the opening lecture, this was followed by three presentations from staff at York St John University (Rob Avery, Kerry Edwards and Dr Sarah Crabbe) who outlined their use of Twitter for effective student engagement together with as a platform to collect ideas and engage with staff from a global network for continuing professional development.

Glenn presented his work on utilising multiple social media platforms to facilitate student learning (especially within green chemistry) together with more recent work comprising of working with students as partners to develop a portfolio of mobile applications for game-based learning.



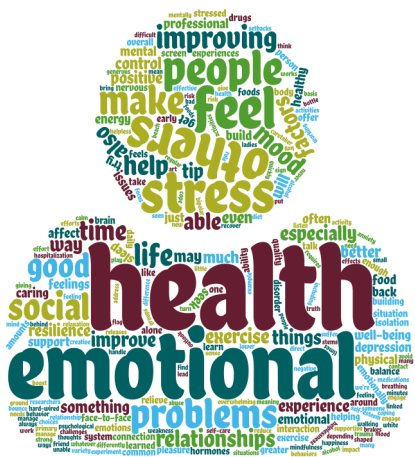
Clarke Group News



Congratulations to Kirsten Hawkins who won best poster prize at the RSC Organic Division Regional Meeting on 27 March. Kirsten's poster was on a novel two-component gel which can catalyse the asymmetric synthesis of threose and erythrose under potentially prebiotic conditions.

Chris Maddocks represented the group at the SCI Northern Regional Postgraduate Research Symposium, where he presented a talk on the Asymmetric "Clip-Cycle" Synthesis of Pyrrolidines. Nik Vagkidis leaves the group after passing his MSc(Res) with a thesis on the "Investigation of Amino Nitriles as Organocatalysts". Congratulations Nik! Nik will be moving downstairs to start a PhD in the Chechik group in May.

Chemistry Mental Health and Wellbeing Team



Nearly 70 Chemistry Staff and Graduate Teaching Assistants have received Mental Health First Aid (MHFA) Training (only Physics and Computer Science have had more staff trained), so thank you to everyone who has taken the time to be trained. Of these, 16 staff have undertaken the full two day MHFA training and four staff are part of the University [Mental Health First Aid Contact Network](#).

The [Chemistry Mental Health First Aiders](#) have volunteered to be a first point of contact if staff or students are experiencing emotional or psychological distress. They are trained to recognise signs and symptoms of common mental health issues, provide initial help and guide you towards possible routes of support; they do not counsel or diagnose.

Support Staff who had received the full two-day training before Christmas formed 'The Chemistry Mental Health Support Team' and were nominated for a Professional@York Award in the Health, Wellbeing and Resilience Initiative of the Year Category. The team won the [award](#) and this led to Helen Coombs being invited to give a presentation at the [launch of the University's three year Health and Wellbeing plan](#).

Since this time more staff have received the full training and joined the team and we have also identified a number of Wellbeing champions to help run activities and raise awareness about wellbeing and resilience, their remit is:

- Work together to create, foster and promote a culture of wellbeing within the Department of Chemistry
- Work with other Departments and Centres to share best-practice and provide mutual support across the University
- Provide light-touch support to staff and students, signposting them as appropriate to professionals/experts and/or resources; but not providing counselling to individuals

Staff involved are:

Mental Health First Aiders (italics denotes member of Mental Health First Aid Contact Network)

Gregg Addicott, Liza Binnington, Helen Burrell, James Comerford, Helen Coombs, Sue Dunkerley, Emma Dux, Leonie Jones, David Pugh, Julia Sarju, Moray Stark, Adrian Whitwood

Wellbeing Champions

Alyssa-Jennifer Avestro, Matthew Badham, Helen Coombs, Alice Duckett, Ruth Purvis, Fiona Shaw, Christina Surdhar, William Unsworth

Most of us have very busy lives, juggling home and work commitments and finding the time to relax and have some time away from all the stresses and strains can be very difficult; especially when we can be contacted at any time and in any location and in the current climate of uncertainty over Brexit and changes to the Higher Education sector. However, finding the time to have a break is very important, be it a holiday to completely relax or having short breaks during the working day. The benefits of doing this are [well documented](#) and can really help to minimise stress.

We have a number of activities and initiatives in Chemistry:

- 'Quiet Room' (C/A137) available: for staff and PGR students who work in open plan offices and need some time alone or for confidential discussions or just for staff to chat, have a tea/coffee break or lunch
- *Focus groups and lunchtime fora* held to discuss issues and provide support, including very well attended sessions on imposter syndrome and work-life balance
- *Promotion of activities* e.g. Time to Talk Day and Drop in Tea and Cake sessions during Mental Health Awareness Week
- *Sources of support:* Over 70 posters on the backs of toilet doors across the Department and adapted for use by other departments
- Weekly Yoga sessions
- Craft Group
- Assignment of Buddy Mentors to all new staff and PGR students
- Flexible Working Scheme available for staff
- Vacancies advertised full-time include the words 'Flexibility available' and most studentships available part-time
- Some vacancies advertised to cover a range of different working hours e.g. from 0.6 to 1.0 FTE
- Email management focus group held and Chemistry Google Working Group prepared suggestions to save time when sending and answering emails
- Workload focus group held; HoD pushed for workload stress to be discussed at University level as well as looking at internal processes
- Lunchtime resilience sessions run in Department, facilitated by staff from L&D Team – available to all staff categories
- Continual reinforcement that all staff and PGR students should take their annual leave
- *Tea, Cakes and Dog Petting during Assessment Periods:* for students but a number of staff also take advantage



Chemistry Quiet Room



Follow

A fantastic turnout of chemistry undergrads at our tea and cakes break from revision session. Sunny weather and friendly Hydrocarbon Dogs!



7:10 AM - 15 May 2018

Ongoing and new activities include:

- Encourage University to adopt Mental Wellbeing / Mental Health First Aid training as core aspect of PGCAP courses
- Continue to learn from good practice in other Departments and institutions
- Work with Mental Health First Aid Contact Network to provide support across the University for those who are supporting others (cross-departmental framework to be established)
- Organisation of walks at lunchtime

Thanks to Moray, Health, Safety and Wellbeing is now a standing agenda item on all Departmental committees.

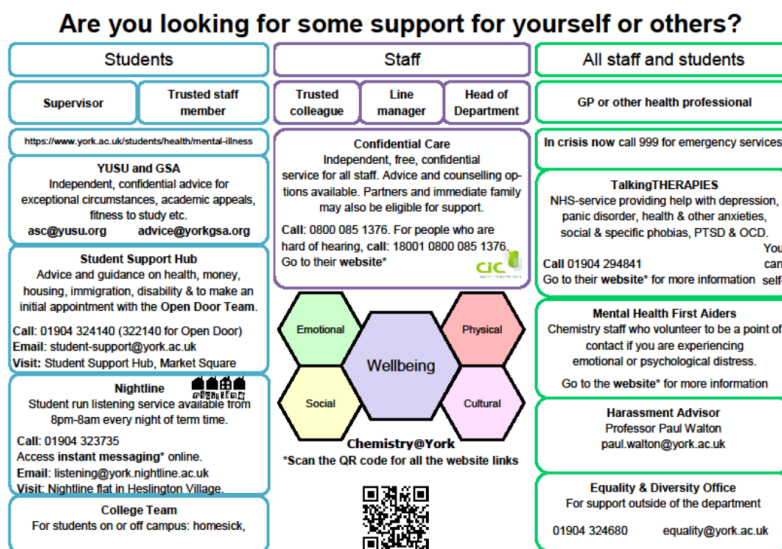
Sources of Support

Within Chemistry, information and support can be found on the external and internal websites:

[Mental Health](#)

[Health and Wellbeing](#)

[Confidential Care](#) is the 24hr counselling service provided by the University for its staff members. The service offers free, independent counselling and emotional support for any staff member who is in need of support. This can be either via telephone counselling, or by up to five sessions a year of face-to-face counselling. The service is hosted entirely off campus by an independent provider to ensure that confidentiality is maintained.



Confidential care also offers a number of other practical support services, including legal, financial, tax, debt, and family care (including advice on the care of elderly relatives). It can also offer advice on practical matters for a wide range of things from moving house to party planning. Caroline Dessent is currently part of a group who is reviewing the operation of the confidential care service. If anyone has experience of using the service and would like to share their feedback experiences of using the service to inform the review, please get in touch.

Lunchtime walks will take place between 12:15 and 12:45 on Friday 17 May, Friday 14 June, Friday 12 July, Friday 16 August and Friday 13 September. Meet at Chemistry reception.

If anyone has any ideas for future activities and initiatives for the team or would like to get involved, please contact Helen Coombs, helen.coombs@york.ac.uk or add a comment via the [anonymous online suggestion box](#).

Chemistry in Focus Competition

The Chemistry Communications Group are delighted to announce the first **Chemistry in Focus Competition**. This will be an excellent opportunity to showcase the creative side of our Department, get your entry displayed and win a place in the Chemistry Departmental Calendar for 2020.

This year's theme

All members of staff and students are invited to submit up to three digital images via email to [Chemistry Communications](mailto:ChemistryCommunications@york.ac.uk). Please contact chem-comms@york.ac.uk for further information on submitting non-digital art. The themes for this year's competition are as follows:

- People in Chemistry
- [International Year of the Periodic Table 2019](#)
- Discovering Chemistry

Submission of entries

You can submit entries in the following media: photography, painting, drawing or digital artwork and in either monochrome or colour. Please note that the submission deadline is Friday 31 May 2019. For full information on conditions and entry please see Rules and Conditions of entry below.

Competition Event and judging

Shortlisted entries will be printed via a poster printer and displayed at a special event which will take place on Monday 10 June 15:00-16:30 in C/B/102. The selection of the winning entries will be decided by all members of staff and students via a voting system using stickers to select your favourites. You are all invited to attend the event where refreshments will be provided. The winners will be announced at the end of the afternoon. The top 12 images will be compiled in a Chemistry Calendar for 2020 which will be released in time from Christmas.

O'Brien Group News



This month, we welcomed Rebecca Appiani from Milan to the group. Rebecca is here for five months as an Erasmus visiting researcher and will be working on the synthesis of new 3-D fragments.

Earlier this month, Nico Seling gave an oral presentation at the SCI's Regional Postgraduate Symposium which was held in York. Nico presented his PhD research on the lithiation-trapping of oxygen and sulfur heterocycles and did a great job, scooping the runners-up prize. Many congratulations Nico – here he is in action!

Bus Season Tickets



Get unlimited First York bus travel when you buy an annual pass, exclusive to University of York staff. Only £260 per year.

See www.york.ac.uk/admin/hr/employee-benefits/travel/bus-season-tickets.

You can also receive discounts on monthly or 20-trip tickets, or pay a reduced rate between the railway station and campus on any First service as long as you show your university staff card.

Yellow Trays by Photocopiers

Yellow trays have been set up next to relevant photocopiers (library, photocopier room and other select locations). Please put anything printed off on one side in these so that people can reuse for scrap paper - either for re-use for writing, making notes, drawing, etc.

If you print something on one page and it is not needed anymore, please put them in the trays for reuse by others.

You can also use the paper to print in the photocopiers:

- 1) When selecting your document to print, please select 'print one-sided' and select a particular tray, for example Tray 2. Please put the paper in BLANK SIDE FACE UP.
 - 2) When photocopying onto scrap paper, please put the paper into a particular tray, for example, Tray 2, BLANK SIDE FACE UP, then swipe your card, select Copy > Options > Sides > 1 to 1-sided, and then select Paper Selection > Paper Tray > Tray 2.
-

Don't Waste the Waste Video



For those who haven't seen it (and a reminder for those who have!) please see the following waste video as a reminder that we can continue to recycle almost all our rubbish.

<https://www.youtube.com/watch?v=2aQtg1u5Mk>

Switch it Off!



Staff—PCs and Monitors should be switched off overnight (preferably at the wall).

Or during the day you can send your computer to 'sleep' via the Start Menu (Click on the arrow next to 'Shut down'), **for example during meetings, lunch.**

Please also turn off any equipment that doesn't need to be on.

You can also turn off your monitor if you are away from your desk for more than 15/20 minutes or so – screensavers don't save energy!

Mixed Recycling

Please see the following web page for what to put in the recycling bins/ general waste bins:

www.york.ac.uk/about/sustainability/recycling/wasterecycling

The following materials can be placed in the Mixed Recycling bins:

- Paper
- Magazines
- Cardboard
- Plastics
- Plastic Bottles (empty)
- Post-It Notes
- Envelopes
- Empty Pizza Boxes
- Foil Crisp Packets
- Sweet Wrappers



Food waste bins – these are located in staff kitchens and the following materials can be placed in these:

- Left-over food, Bread
- Meat
- Vegetable Peelings
- Coffee Grounds
- Tea Bags
- Clear plastic bags with food in
- Packaging full with food

The following cannot be placed in Food Waste: egg shells, empty food packaging or opaque plastic bags. Please also do not put tissues/paper towels in these.

Glass from food and drink can be placed in the college glass bins (there is a glass bin over by WACL car park), there is also a glass bin in D block coffee room.

Safety Matters Walking in the shoes of a fire fighter

Department of Chemistry Safety Team members Jing Wood & Moray Stark went to a training day for new retained fire fighters at the North Yorkshire Fire & Rescue training centre in Easingwold in April, attending two theory sessions on combustion and fire development and two fire-fighting practices with the new recruits.

This was a highly memorable, and highly sobering, day; listening to descriptions of the development of fires and their hazards, then witnessing astonishing practical demonstrations where smoke and gases from a fire build up and result in an explosion that would be life threatening if at full scale.



Wearing the heavy, 7-layered, protective clothing of fire officers, Jing (l) and Moray (r)



Trainee firefighters tackling a simulated kitchen fire, Moray (r) in breathing apparatus.

The culmination of the day was getting into the fire fighters' heavy, 7-layered, protective clothing, heavy boots and breathing apparatus, crawling on our knees and inching towards the fire with a temperature at head height of 550°C, then trying to judge the amount of water to spray to be sufficient to suppress the risk of flashover in the smoke above our heads, without generating so much steam that you quickly become unbearably hot

A day spent with the fire & rescue trainees has further heightened our awareness of the hazards and the complexity of the situations they can face when attending a callout, and confirms the determination that for everyone in the Department of Chemistry that prevention is always, always the best option with fire safety.

---Joint Research/Equality & Diversity Seminar---

All seminars are open to all members of the Department – UG, PG, PDRA, staff

Friday 3rd May – 13:00, C/B/102

Prof Polly Arnold, University of Edinburgh



“Putting the ‘f’ in chemistry:

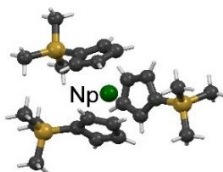
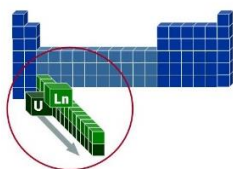
A molecular exploration of the elements hidden in our nuclear waste”

Uranium is one of the most famous, or perhaps infamous elements. It is the heaviest naturally occurring element and sits amongst the metals at the bottom of the periodic table, the f-elements.

Its packed nucleus draws the core electrons in close, subtly changing the behaviour of its compounds. This has generated many headaches for scientists dealing with nuclear waste which contain complex mixtures of uranium compounds and those of its more radioactive neighbours.

We design and make new molecules of uranium, and its rarer, man-made, highly radioactive neighbouring elements, that allow us to model and study these interactions. Where these challenge our traditional views of uranium chemistry, we improve our fundamental understanding of uranium's behaviour, and thus our ability to deal with our nuclear waste legacy. We will show new reactivity of uranium complexes with traditionally inert molecules such as N_2 , and unprecedented chemistry of the oxo groups of the ubiquitous, and famously unreactive uranyl ion, $[UO_2]^{2+}$.

Outside the laboratory, there is an economically important imbalance in science: the talent pipeline still leaks female scientists and engineers at a disproportionately high rate, with the cost to the UK economy of losing female scientists estimated as US\$ 2 billion per annum. The University of Edinburgh's female scientists started their campaign for equality with street riots in the 1870s, and today Edinburgh's School of Chemistry has been recognised for its excellence in equality and diversity actions. I made the film 'A Chemical Imbalance' as a call to action to improve equality of opportunity in STEM in 2013. I will take a look at how we've all been doing since then, and ask if it's time for another riot.



Reviews of research: P. L. Arnold, M. S. Dutkiewicz, O. Walter, Chem. Rev., 2017, 117, 11460. P. L. Arnold, Z. R. Turner, Nature Rev. Chem., 2017, 1; P. L. Arnold, B. E. Cowie, J. M. Purkis, J. B. Love, J. Austin, Chem. Rev., 2019, in press.

Equality & diversity resources: <http://www.chemicalimbalance.ed.ac.uk/>
<http://www.equal-bite.hss.ed.ac.uk/>
<http://www.rsc.org/campaigning-outreach/campaigning/incldiv/inclusion--diversity-resources/>

Followed by refreshments in C/B/101 from 2-2.30 pm

Hidden Figures

film screening

Thursday 9th May 2019
3.00 – 5.30pm C/A101



Join us in celebrating diversity in the Department of Chemistry with our film screening of *Hidden Figures*.

Hidden Figures tells the incredible story of three African-American women working at NASA who overcome gender and race bias to make space history.

Refreshments provided

To help us plan for the event,
please sign up via the QR code:



Chemical Interactions provides all Departmental members (students and staff) with opportunities to get to know each other through informal and social events.