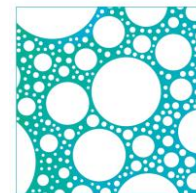


# Australasian Colloid and Interface Society

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## ACIS Newsletter – Issue 14, March 2018

### Welcome

Dear members,

Welcome to our 14<sup>th</sup> issue of ACIS News! We produce a quarterly newsletter - sent around in March, June, October, and December - to keep ACIS members informed of our initiatives and for members to directly communicate with their Society. Please send your suggestions and items for the next newsletter to [boonmian.teo@monash.edu](mailto:boonmian.teo@monash.edu)

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### News

#### 9<sup>th</sup> Biennial Australian Colloid and Interface Symposium - Mark your Diaries!

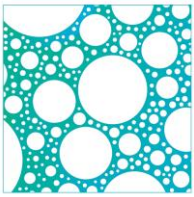
We are pleased to announce that ACIS 2019 will be held in Hobart, at the Hotel Grand Chancellor from 3-7<sup>th</sup> February 2019. [Ray Dagastine](#) is the conference chair, with [Ben Boyd](#), [Andrew Clulow](#), [Charlotte Conn](#) and [Alison Tasker](#) forming the committee. The call for themes is open and will close on 15 April 2018. The call for nominations for the Plenary and Alexander lectures will also close on 15 April 2018. We look forward to welcoming you to Hobart.



#### Another successful student conference in Warrnambool!

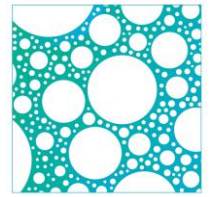
The [31<sup>st</sup> ACSSSC2018](#) was successfully hosted by Monash University in February 2018. Many thanks to Dr Rico Tabor, Gil Garner and Ben Boyd and their amazing students Hana Shiraz, Llyza Mendoza and postdoc, Shane Meaney! We also congratulate all students for the engaging oral presentations and posters, particularly **Isaac Gresham** who won the ACIS-ESIS Award and **Liam Scarratt** who won the Healy-Hunter Award for the most outstanding oral presentation! Well done!





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## 2018 – the Year of Colloids in Brazil!

We are delighted to announce two events that will make 2018 the Year of Colloids in Brazil!

### 1. São Paulo Advanced School on Colloids ([www.spsas.iqm.unicamp.br](http://www.spsas.iqm.unicamp.br))

The SPSAS on Colloids will be held in Campinas, from October 28<sup>th</sup> to November 7<sup>th</sup>, on the campus of the University of Campinas (UNICAMP) and the CNPEM (Center for Research on Energy and Materials), with activities at the University of São Paulo (Institute of Chemistry).

The School will cover advanced topics on various types of colloids and the most important techniques employed for their characterization.

These Schools are an initiative of FAPESP designed to attract young and talented scientists from Brazil and abroad. This School is designed for around 100 students, half of whom should be from abroad, who should experience close contact with the most prominent scientists in their fields.

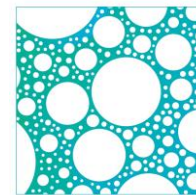
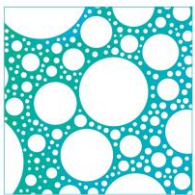
The School also includes hands-on activities and periods of discussion of the students' own research results. Selected students from other cities, states or countries are entitled to receive benefits to cover the expenses for airfare and daily allowance during the School.

### 2. AutoOrg 2018: 6th Meeting on Self Assembly Structures In Solution and at Interfaces ([www.autoorg.org](http://www.autoorg.org))

7<sup>th</sup> to 9<sup>th</sup> November, São Pedro, SP at the beautiful Colina Verde Hotel

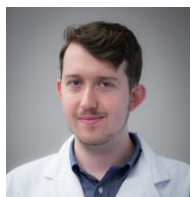
Meet and get to know the Brazilian community working on Colloids (with an international flavor!)





## Nucleating Colloids – a Column for Students & Early Career Researchers

### Benefits of an overseas research experience



**By Liam Scarratt, PhD student at Sydney**

I started my PhD in March 2015, and am planning to submit around October this year. Despite being near the end, I find that it's easy to forget to be confident in yourself. Research doesn't always work out, and requires that you live in the feeling of uncertainty for prolonged periods of time. The correct attitude to adopt in my opinion is one of curiosity and excitement, which can spur you on despite setbacks and false leads. However, I find it can be much easier to adopt a generally negative perspective, assuming the worst, with the bonus of being pleasantly surprised when things works. For me, this usually leads to an underestimation in my own ability, and feeds into the old impost syndrome that many of us know all too well. The further I have progressed into my PhD the more easily I found myself slipping into this frame of mind, even though I was gaining experience and knowledge in my research area. Regardless of my achievements or progress, I couldn't see myself succeeding in the future, ignoring the logic within, and perspective from loved ones and peers.

It turns out that all I needed was to be thrown into a different lab in another country for 3 months.

Between September – December 2017 I had the opportunity to visit the Max Planck Institute for Polymer Research in Mainz, Germany. There I worked with Professor Doris Vollmer and her group on liquid infused surfaces, using laser scanning confocal microscopy to study the dynamics of liquid-liquid interfaces on photolithography patterned substrates. I was already familiar with the field of research, but the investigative and sample preparation techniques were a new challenge to undertake. Before commencing my work, I decided that this would be a good test to see how I could handle myself in a hypothetical post doc position, and gave the 3 months on the project everything I had. The combination of being in unfamiliar surroundings both in and outside the lab enhanced my focus and I quickly picked up the skills required for conducting my research. I was the only person working on the project, which was still in its early stages, and so exercised lots of autonomy, updating Doris and other group members on a weekly basis. Within the first month I was fault finding and progressing my research towards a goal of having something towards a publication at the end, and it was a blast!

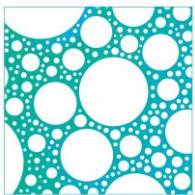
One of things I gained from this experience was having confidence in my ability to adapt. We may be researching a lot about a narrow set of concepts in a PhD, but we are also becoming more aware of how we learn. Tackling new research areas and techniques is an exciting feeling, and something we are all capable of doing. I also appreciated how much I already knew about my research field. I thoroughly enjoyed having discussions with my peers where I could offer a fresh perspective on the problem and vice versa. Depending on where we are focusing our work we become familiar with different concepts, so there are almost always interesting ideas to exchange between peers working in similar and different fields. That's what I like so much about conferences, particularly poster sessions.

I am back working hard to finish my PhD, and I still go through the standard slump here and there, doubting myself and what I am doing. But I know now more than ever that it's just a state of mind. I just need to challenge it, and remember what I am capable of more often.

I am truly grateful for my overseas experience and must thank the Australian Nanotechnology Network and DAAD German Academic Exchange for providing financial support through scholarships, without which I would not have been able to make the trip. Also, I must thank both my supervisor, Chiara Neto, and Doris Vollmer for setting up the

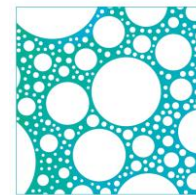






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exchange. It also goes without saying that the Vollmer group and the Max Planck Institute for Polymer Research is filled with fantastic people who made my stay a pleasure, from the scientific discussions to cultural exchange. I highly recommend this experience to everyone. Go and put yourself in a fresh environment on a slightly different project for a 3 – 6 month stint, it'll do wonders!

## Diversifying diversity: underrepresented groups in academia



Bio: Geosmin Turpin is a PhD student in the School of Chemistry at Monash University, being supervised by Rico Tabor and Boon Teo. Her research interest centres on combining ultrasound with other techniques to synthesise and functionalise graphene-based systems, and looking at what these processes are doing at the interface. She is a proud queer transgender scientist and educator as well as being on the ACIS Equity committee. Email: [Geosmin.Turpin@monash.edu](mailto:Geosmin.Turpin@monash.edu)

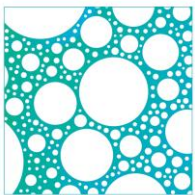
Our world is made of diverse groups of people with rich differences in experience, whether this is diversity in gender, sexuality, race, ability, socioeconomic status, access to education or geographical position. Oftentimes people from minority groups experience different challenges, pressures, and difficulties that are often unique to the intersection of minority groups they belong to. These issues can be large or small, and are often but not exclusively due to the beliefs and attitudes shared and expressed by society. A large issue in science and technology based fields is one of representation, in which there are less people from minority groups in leadership positions than you'd expect if looking at what percentage of the population they make up.

These issues are complex, and people spend their careers trying to understand why these inequalities exist on a systemic level and how to fix them. My intention in writing this piece is not to critically unpack them, as I am not an expert, but instead to show that they are happening and why it is important that we as a community keep pushing for access, equity and diversity in our workplaces. In doing this I am trying to reflect the objectives of the ACIS Equity committee which I am very proud to be a part of, as education and advocacy is a powerful tool for improving equity and diversity, hopefully making the fields of colloidal and interfacial science a great example for the wider scientific community.

I'm very glad to be on the committee as a PhD student and a transgender person and to represent the issues I have experience. However, I personally do not claim to be an expert in all other areas, especially as I have limited experience in industry, so it would be irresponsible for me to do so. Instead I seek to present the arguments and experiences of other people. As scientists, we like evidence to back up our arguments, and so to counter the attitude I often encounter that we as scientists shouldn't have to care or acknowledge these social and political issues, I wanted to show the measurable impacts they have. I provide sources not because I want to write this academically, but instead to invite others to educate themselves and form their own opinions and perspectives of the research I'm presenting.

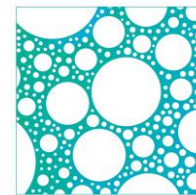
The main question here is why do things get less diverse as we look at higher leadership positions in STEM? For example, in Australia, over 50% of Natural and Physical science undergraduates are women, however [this decreases to less than 20% of Level E](#) (Professor-equivalent) position-holders. The question of why this happens is complex, and varies depending on which sort of minority groups you are talking about, though there are two key processes that have been widely acknowledged for a long time, with more and more data supporting this.

The first is the idea of a "leaky pipeline", where encountering the social and practical pressures and prejudices of belonging to a minority group in an already stressful field causes lower rates of retention at each stage of a career in academia or industry, starting as early as undergrad. Whether in research or industry, STEM fields typically have a (mostly) linear progression from undergraduate studies onwards, and losing people early on means they aren't around to participate at higher levels, leading to underrepresentation. Some examples of this have been shown for lowered retention of [undergraduate LGBTQ students in STEM fields](#) (even though they are more likely to be involved in



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research at undergraduate levels which conventionally is a good signifier for continuing to pursue science), and the percentage of [graduates with disabilities decreasing tenfold](#) between undergrad and postgraduate studies. This extends to postdoc positions, which is highly visible when looking at the [disproportionately low retention rates of women](#) in early-career research positions.

The reasons for these diversions away from STEM fields are unique to each experience, however there are some underlying common factors. Many minority groups experience challenges day-to-day, contending with harmful ideas or expectations from others, called [microaggressions](#). These include things like stereotyping, negative comments and assumptions, or being in the presence of homophobic/racist/sexist jokes directed against a group one might belong to.

For me, this has included being called homophobic slurs while at conferences, hearing jokes about transgender women, and of course [changing the way I present myself](#) to live with the anxiety and fear of being outed as transgender for six and a half out of the last 7 years, as well as the fear of how I would be received by the wider community when I did come out. (For the record, if I'm being honest, my research group, my university, and ACIS have all been more supportive than I ever dared to dream, and for that I am very grateful!)

This “minority stress” compounds when somebody belongs to an intersection of minority groups- for example, as a transgender woman I experience transphobia and sexism, and so I would face challenges unique to my experience that would be different to those experienced by a cisgender woman or a transgender man. Although they may seem relatively harmless to outsiders, they have been shown to significantly impact the mental health of people who often encounter them, and can help to explain why in a field with already [shocking rates of mental health issues](#) they are shown to be much higher in people who aren't [straight, white, men](#).

This can extend to more systemic issues too- for example I will be unable to attend international conferences in countries where being transgender is illegal, so if something is scheduled there I limit both my professional opportunities and feel alienated by my community. This feeling of alienation is another huge factor in losing people from minority groups, and in this way a lack of diversity can be self-propagating. In my 7 years of being in chemistry, I have been lucky enough to meet one openly transgender academic, and one openly gay academic.

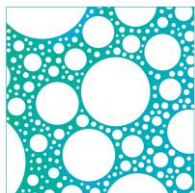
Although other staff I've encountered have been proud and supportive allies, it's been hard at times to see myself succeeding as an academic when I have had so few role models like me, despite at least 6.5% of the population being LGBTQ, and this experience is quite common in other minority groups- if you're the only person belonging to a certain group in your laboratory, depending on the attitude and culture around you it can be difficult to feel comfortable and welcome.

As well as minority stress, the other huge issue of inequity in STEM involve systemic biases in hiring and funding. Two examples of this involve gender and race, with [women being viewed as less competent](#) by people in hiring positions when compared to equally qualified men, even when being assessed by other women, [or black people being less likely to be granted funding after controlling for factors such as applicant's educational background, country of origin, training, previous research awards, publication record, and employer characteristics](#).

These biases mean that the minorities that do get through the pipeline are then encountering extra challenges to being promoted or gaining funding to continue their research. Examples like this are probably the best refutation to the argument that people in hiring positions “don't see race/gender/sexuality” or “just hire based on merit” – the evidence is that, consciously or not, there is bias there. There is a growing push towards double blind peer-review of grants, papers, and resumes that seeks to fix this issue, and I think that even if it wouldn't necessarily work in all contexts, based on the evidence I would love to see more of it.

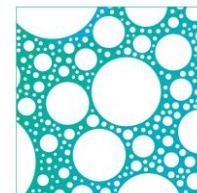
As for fixing the first issue I highlighted, unfortunately I don't have easy answers- we have been aware of these issues for a long time, and it takes large scale progress and change, with the scientific community sometimes taking a while to reflect more widescale social progress. I believe this will improve as we get the message out there that this *does* matter and is important for us to discuss and fix as scientists if we want our companies and research institutions to be the very best they can be- as nobody else is going to fix this for us.

What I can point to as a sign of things improving is recent [evidence for inclusion in Australian workplaces](#) which show the impact of being in a workplace where “a diversity of people (e.g. of different ages, cultural backgrounds,



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genders) feel valued and respected, have access to opportunities and resources, and can contribute their perspectives and talents to improve their organisation". It shows that these initiatives have huge benefits not only to the wellbeing of those employees who may be the intended target of diversity and inclusion initiatives, but also even those workers who aren't the intended targets. These benefits have huge impacts on the happiness and effectiveness on the entire teams in these workplaces, who were 19 times more likely to be very satisfied with their jobs, 10 times more likely to be highly effective, and 4 times more likely to stay with their employers over the coming year.

And this just makes sense- inclusive, welcoming environments help to counter all-too-common feelings of alienation in scientific fields, and build engagement and a sense of worth, which translates to better mental health outcomes. This means we can make the case that fighting for equity, diversity and inclusion is essential not just from what is just, but also *what is necessary for the global scientific community to be the best it can be*.

From a personal perspective, I'm not going to be afraid of going for jobs as a transgender person because it's given me unique experiences that shape how I see the world, therefore giving me new ways to look at problems and innovate creative solutions. It's also given me practical skills such as an ability to switch between different communication styles quickly, and a heightened awareness of cost, benefit, and risk analysis (because every time I go out in public, I need to determine how safe it is for me to express myself, whether I'm interacting with somebody new, or even going to the bathroom!).

People from other minority backgrounds that I am not a part of will have their own unique abilities and perspectives too. Companies and research groups by necessity need people with different strengths, expertise, and insights because we are furthering the limit of human knowledge! This is a huge task, and absolutely requires the very brightest minds looking at problems from every angle as creatively and intelligently as we possibly can, and that means getting more diversity and inclusiveness into our scientific spaces. So please get out there, try and be aware of and challenge inequity and bias where you see it, on a systemic level and in your personal interactions. Talk to the ACIS equity committee about your ideas and concerns, talk to your boss, your friends, and your peers, and help us create this more inclusive scientific future.

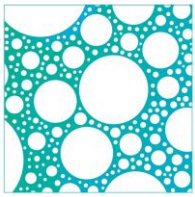
Feel free to email Geosmin at [Geosmin.Turpin@monash.edu](mailto:Geosmin.Turpin@monash.edu) to discuss the article, linked websites, if you have any ideas for the ACIS equity committee, or to ask any questions about being a queer, transgender PhD student in chemistry.

## Appointments



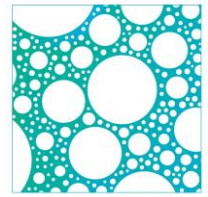
I received my Bachelors of Arts and Science from the University of Melbourne in 2005, majoring in Psychology and Chemistry. After a short stint in the United States working under Prof John Pojman's supervision, now at Louisiana State University, I decided to give up my dream of becoming a psychologist and pursue a postgraduate degree in chemistry. My doctorate degree in Physical Chemistry at the University of Melbourne with Prof Ashokkumar Muthupandian and Prof Franz Grieser was to understand the use of sound waves for colloidal synthesis. I love travelling, and after my PhD, I embarked on journey that was not only scientifically fulfilling but also personally rewarding. I was very lucky to get postdoctoral research positions in Japan (Tohoku University, 2011), Denmark (Aarhus University, 2012-2014) and the UK (The University of Oxford, 2014-2016).

I am thrilled to be back in Melbourne and to be appointed as a lecturer at the School of Chemistry, Monash University earlier this year in May 2017. I will be joining forces with Dr Rico Tabor in the exploration of the exciting world of colloidal chemistry. My research interests lie in developing different types of nanoparticles towards biomedical applications. I have been lucky to have worked together with exceptional scientists and mentors in the field of ultrasound and I am excited to use my knowledge in ultrasound and colloidal chemistry for a broad range of exciting applications. I very much look forward to meeting everyone in the ACIS community and expand my research knowledge on ultrasound and colloidal chemistry within Australia



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## Job Ads

### PhD scholarship: Fluid dynamics at the interfaces

We are seeking a person with a passion for fluids mechanics to undertake experimental research of multiphase flows. This project will be funded by a MARSDEN Fund, based in Massey University (Auckland) and University of Auckland, with the experience/work with world-leading scientists from University of Birmingham or Imperial College London (Chemical Engineers). Deadline for this application is 1<sup>st</sup> June 2018. For additional information, please contact Dr Emilia Nowak ([e.nowak@massey.ac.nz](mailto:e.nowak@massey.ac.nz)).

## Activities

### Join our Awards, Communications, Conferences and Events Committees

ACIS needs its members to be actively engaged. Please let us know if you would like to be involved in the committees that will run the activities of the Society: *Awards; Communications; Conferences and Events*. Or if you would like to propose other activities we should be running. **We especially invite students and early-career researchers to become involved.** Please email your interest to [acis@colloid-oz.org.au](mailto:acis@colloid-oz.org.au).

### Visiting Scientist Register

Are you planning to host a visit by an outstanding scientist in the colloid and interface field? Why not let ACIS members know about the visit? We aim to keep track of visiting scientists, to facilitate their introduction to the Australasian scientific community. Please email details of the visit to [acis@colloid-oz.org.au](mailto:acis@colloid-oz.org.au).

### ACIS Membership

Please encourage your colleagues, students and industrial partners working in the field of colloids and interface to join us. General membership is \$100 per annum. The membership year is from 1st July each year. Memberships paid after this date are valid until 30<sup>th</sup> June of the following year. More information is available on our website <http://colloid-oz.org.au/>.



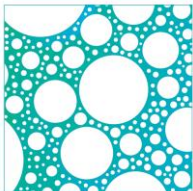
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## Use our LinkedIn Group to tell people your news

ACIS is now present on LinkedIn. Please join our LinkedIn group and post discussion items on job ads, conference calls, and interesting facts about the wonderful world of colloid and surface science.

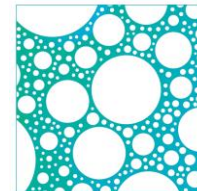
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## Future Events

### **NanoBio 2018: 1st International Conference on Nanotechnologies and Bionanoscience (NanoBio 2018)**

24 Sep - 28 Sep 2018 • Crete, Greece

<http://nanobioconf.com/>

### **MNC2018: 31th International Microprocesses and Nanotechnology Conference**

13 Nov - 16 Nov 2018 • Sapporo, Japan

<http://imnc.jp/>

### **Gordon Research Conference: Environmental Nanotechnology**

02 Jun - 07 Jun 2019 • Newry, ME, United States

<https://www.grc.org/noble-metal-nanoparticles-conference/2018/>

### **ICAMSMBP 2019: 21st International Conference on Atomic, Molecular, Soft Matter and Biological Physics**

20 Jun – 21 Jun 2019 • Vienna, Austria

<https://waset.org/conference/2019/06/Vienna/ICAMSMBP>

### **ICBCN 2019: 21st International Conference on Biomaterials, Colloids and Nanomedicine**

06 Aug - 07 Aug 2019 • Amsterdam, The Netherlands

<https://waset.org/conference/2019/08/amsterdam/ICBCN/home>

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The Newsletter team is:

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