



IUSSI North-west European section

International Union for the Study of Social Insects
Autumn Newsletter 2018

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Announcements

Winter meeting

We look forward to welcoming you to the Natural History Museum, London, for our annual Winter meeting which will be held at 20th of December.

Program: registration starts at 9am, first talk at 10am. We will have a full day of talks, with a poster session over tea/coffee in the afternoon. After the talks informal discussions continue in the pub.

Plenary Speaker: We are very excited to announce Professor Kevin Foster from Department of Zoology, University of Oxford as our plenary speaker at this meeting. See <https://zoo-kfoster.zoo.ox.ac.uk/> for more on his exciting research!

Presentations/Abstract submission:

Especially students are encouraged to present their work, but all submissions are of course welcome! If you want to give a talk or a poster, please send an abstract (max. 200 words) to heikki.helantera@oulu.fi with the words "IUSSI-NW abstract" in the title line, and indicate whether you are applying for a talk or a poster.

Deadline 1st Dec. There will be a prize for the best student talk and poster.

Registration:

Register by e-mail to heikki.helantera@oulu.fi with the words "IUSSI-NW registration" in the title line and you will get the instructions for payment in a reply e-mail. If you submit an abstract for a talk or poster there is no need for a separate registration e-mail. Registration fee 10£ student members / 20£ regular members / 30£ non-members. Includes coffee/tea. **Deadline 1st Dec.**

Officers stepping down

As all three, our president, treasurer and secretary are reaching the end of their three-year term, new officers for 2019-21 will be elected at the Business meeting taking place as part of our Winter meeting. We are looking for nominations, so if you have suitable candidates in mind, please contact the officers!

Membership reminder

T'is the season for new students to start their research degrees. So now is a great time to check with your research groups and ensure everyone has renewed their memberships and also to recruit new members. If you are not sure if you have paid, drop Liz an e-mail (e.j.duncan@leeds.ac.uk) and she can check the database. Membership fees are unchanged at £7.50 for students and £15 for full members. Payments can be made by:

1) bank transfer. Account name: Northwest European section IUSSI; account number: 16100247; sort code: 602462; IBAN: GB86NWBK60246216100247; SWIFT/BIC: NWBKGB2L; bank address: Natwest, Main Street, Heslington, York, YO10 5ZB

2) paypal to NWEuropeanSection.iussi@gmail.com

3) cheques payable to Northwest European section IUSSI. Cheques can be sent to:

Elizabeth Duncan
Faculty of Biological Sciences
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Be sure to include your name as a reference when renewing by bank transfer or paypal. When you have renewed, please simply let me know how and when you have paid and also let me know if you would like a receipt for your records. You don't need to complete the membership form (downloadable from <http://www.iussi.org/NWEurope/subs.htm>) unless your details have changed."

Lab News

Centre for Social Evolution (CSE) Copenhagen

It's been another busy year at the CSE, and compressing *everything* into a few paragraphs will be impossible, so here are a few highlights of what we've been up to. The CSE continues to expand, evolve and diversify. We now effectively consist of a set of research groups under the leadership of **Koos Boomsma**, **Michael Poulsen**, **Jes S e Pedersen**, **David Nash**, **Jon Shik** and **Guojie Zhang**, although we still have many common projects. We continue to work largely on social insects, but we also added even more organisms to our research ranging from the gut bacteria of birds to mountain goats.

Over the last year we said goodbye to postdocs **Tabi Innocent**, **Panos Sapountzis**, **Mariya Zhukova**, **Irshad Ul Haq** and **Joanito Liberti**, and **Line Ugelvig** will also soon join them, although she is still with us one day a week at the moment. **Rafael da Costa** successfully completed his Ph.D. with Michael, but is now hanging around as a postdoc. David's Ph.D. student **Anne Andersen** submitted her Ph.D. in September, and will defend it towards the end of October.

New additions to the centre are postdocs **Antonin Crumiere** and **Sara Kildgaard**, who joined Jon and Michael's groups, respectively. Michael also welcomed back a couple of old acquaintances to his group as new postdocs: **Ben Conlon** (who did his M.Sc. with Michael 2013-2015) completed his Ph.D. in Halle, and then returned to the fold, and we persuaded **Nick Bos** (who did both his M.Sc. and Ph.D with us) to return despite flirtations with the commercial world and Helsinki.

We have been globetrotting as usual over the last year, with Michael leading a group to South Africa in search of termites, the usual trip to Panama for fieldwork and to collect fungus-growing ants (albeit with rather fewer participants this year), and fieldwork on L es  (mostly with a film crew who are making a wildlife documentary including *Maculinea* butterflies). We also sent a baker's dozen of delegates to the IUSSI2018 congress in Brazil, where we were overjoyed to see Koos awarded the Hamilton Award. However, we only had a short while to enjoy his new-found status before he disappeared to the Wissenschaftskollegium in Berlin for a 10 month sabbatical which will take him through to next summer.

- David Nash

Duncan Lab (Leeds)

Another season has rapidly flown by, and we have avidly continued our research here in Leeds, with an eventful field season now drawing to a close. At the end of March, Rosie and Jens were happy to help out during the Discovery zone, where they got KS3 students excited to learn more about honeybees and bumblebees. Replete with "oohs" and "aahs", and some fine honey tasting to boot from Lance Penketh. Rosie then couldn't quite help herself, spreading the conservation message to the new generation of bee scientists with visits to primary schools explaining the differences between solitary bees, bumble bees and honey bees and the importance of each. The lab's outreach efforts didn't stop there either, with Liz even showing a visiting physicist around the apiary for a taste of beekeeping. At present we can neither confirm nor deny that he made it out alive.

By the end of May, the lab also hosted a Biodiversity and Conservation Masters student Vanessa Barlow for the summer. She set up microsatellite markers to investigate monandry in the solitary red mason bee, aimed at helping to inform future conservation efforts. And come June, Mackenzie Lovegrove from the University of Otago joined the lab, filling up the lab further and making the many honeybee worker dissections a companionable and industrious endeavour. Her visit spanned 3 months, during which she investigated the processes governing reproductive constraint in *Drosophila* and honeybees, among other things.

The infamous 'Beast from the East' in March, uprooted the start of the bee season, and may have delayed our queens laying. The following heatwave in the middle of summer made many nectar sources dried up. But our tenacious queens held steady, and we now have a good six hives in our research apiary. We are fervently hoping they will all make it safely through this winter and that next year will bring an early spring! In June, Mackenzie and Liz attended the Euro Evo-Devo conference in Galway and proved that it is in fact possible to get sunburnt in Ireland. The heatwave also contrasted starkly with the 18th international IUSSI meeting in Brazil this year, where it was actually colder at the time than it was in Leeds. Liz, Mackenzie and Jens all

attended great and interesting talks, and presented talks on their recent research. Jens would like to thank the IUSSI NW-chapter once more, for helping him making his attendance possible. As the bee season draws to a close, the Duncan lab looks forward to welcoming new Post-Doc Victoria Norman to the team in October, as well two MBIol and four undergraduate students. All in all, we've had a great year!



The Duncan lab.

Sumner Lab News

The Sumner Lab has had a busy year! **Seirian** has been spreading the word about the economic and cultural value of wasps on the national and international media, including BBC News, BBC Breakfast, Radio 4 Today and ITV News. Read more about why [here](#). All that proselytising has paid off, as the Big Wasp Survey has entered its second year with overwhelming popularity: members of the public have sent in samples from over 6000 beer traps this year! Our new master's student **Shaughn Anderson**, who is visiting from Ludwig-Maximilians-Universität in Munich, is enjoying sorting through these samples along with BSc project student **Debbie Walsh**; but the sheer volume of traps means they're also needing to enlist the help of volunteers from the public. Shaughn is also aiming to find out whether ale, lager or orange juice is the best lure for wasps, which will improve the efficiency of the survey in future years.

Congratulations to **Robin Southon**, **Sam Duckerin** and **Patrick Kennedy**, all of whom handed in their PhDs this year. Robin has spent the summer working with Fabio Nascimento in Brazil exploring the potential of *Polistes* wasps as agricultural pest control agents, while Sam and Patrick are enjoying a well-earned rest in anticipation of their upcoming vivas. Patrick began the year well with his Nature paper on 'Altruism in a Volatile World', and with his thesis submitted, he is lined up to start a 1 year postdoc with his Bristol supervisor, Prof Andy Radford, to enrich his modelling skills. This year we also had the pleasure of hosting **Ikechukwu Onah**, a lecturer from the University of Nigeria who has been using DNA barcoding to resolve the taxonomic diversity of Nigerian wasps and bees.

Post-docs **Michael Bentley** and **Daisy Taylor** are continuing their work on a NERC-funded grant to identify the molecular basis of caste differentiation across the spectrum of wasp social organisation; they've been joined by bioinformaticians **David Lee** and **Joan Dickmann** to help get through the vast amounts of genome, transcriptome and proteomic data on various social wasps. Marie Curie fellow **Ale Cini** has been jetting back and forth between London and Florence as part of his Marie Curie-funded work on the genomics of *Polistes* social parasites. Ale and Michael were enormously successful in campaigning for the Asian hornet *Vespa velutina* to be sequenced as part of the Wellcome Trust Sanger Institute's 25th anniversary [25 genomes competition](#). Ale, Michael and Seirian spoke to members of the public, including schoolchildren, to convince them of the importance of sequencing this invasive species' genome, and subsequently won the vote!

PhD students **Sandra Moreno** and **Ben A Taylor** are deep in the process of data analysis. Sandra recently returned from two months of fieldwork in Dorset, where she conquered infernal temperatures and meddlesome cows in her ongoing effort to study gene expression changes associated with different behavioural stages in *Ammophila* wasps. She is now using microsatellite data to look at the population structure of her study population, which she has now been following for three years. Ben is currently awaiting the results of a large multifactorial RNA-seq experiment examining the genetic basis of caste differentiation following queen removal in socially plastic *Polistes dominula* wasps.

The Robinson Lab (University of York)

The Robinson Lab at the University of York enjoyed hosting the IUSSI Winter Meeting in December 2017, and also many of the group had a fantastic time at the Congress in Brazil – we're looking forward to attending this year's Winter Meeting in London.

PhD student research is progressing well: **Dominic Burns** has continued fieldwork with his second season working on wood ant polydomous foraging networks in the Peak District, **Eleanor Drinkwater** is working on aggregation in woodlice and memory in *Temnothorax*, **Phillip Buckham-Bonnett** has been continuing his work on the impact of *Lasius neglectus* in the UK, **Megan Holgate** has completed her first field season working on range expansion in wood ants in the North York Moors, and **Josie Monaghan** has also been in the field collecting red wood ant samples from across the UK for population genetic analysis in collaboration with Jonna Kulmuni.

Conor Cooper has handed in his MSci thesis on using ants as bioindicators, and will begin his PhD at the University of Cambridge next month. We welcome **Joshua Sammy**, a new MSci student who will work on extending Dominic's model of polydomy to a wider range of ecological contexts. The group is also looking forward to welcoming post-doc **Valentin Lecheval**, who will join the lab this autumn working on an NSF-funded project modelling transportation networks in wood ants and turtle ants, in collaboration with Scott Powell and Matina Donaldson-Matasci.

University of East Anglia (Andrew Bourke's group)

Postdoctoral group members **David Collins** and **David Prince** are now working on a NERC-funded project entitled 'Social evolution and the evolution of ageing: testing the hypotheses', to which we also welcomed **Jen Donelan** as the Research Technician. Co-supervised by Tracey Chapman at UEA, this project aims to use *Bombus terrestris* and *Drosophila melanogaster* to test ideas about the relationship between sociality and ageing. Many congratulations to **Liam Crowther**, who successfully completed his NERC-funded PhD on the ecology and genetics of the range-expanding UK population of the Tree Bumble Bee, *B. hypnorum* (a collaborative project with CASE partner Claire Carvell at the Centre for Ecology and Hydrology, Wallingford). Liam now has a postdoctoral position with UEA colleague Lynn Dicks. Meanwhile, **Ryan Brock** is in the second year of his PhD on the social organisation of *B. hypnorum*, and we will shortly be welcoming **Jenny Livesey** from Exeter University for a new PhD project on dominance and policing in bumble bees. David Collins, Jen and Ryan all presented their work at IUSSI 2018 in Guarujá, Brazil, in August, and afterwards enjoyed travelling to seek out some of Brazil's stunning wildlife.

Wurm Lab (Queen Mary University London) <https://wurmlab.github.io>

Fun and exciting times! We welcome **Federico Lopez-Osorio** who joins the lab as a Postdoc after several years at the American Museum of Natural History as well as **Christina Chatzipantsiou** joining us for a PhD after her Bioinformatics Masters in Crete. We also have some *au revoirs*. **Joe Colgan** remains a regular

visitor to London but is now mostly back in his native Ireland, having begun a position with in Thomas Reed in Cork studying brown trout. Similarly, **Roddy Pracana** successfully defended his PhD and is now a Postdoc working on Hox gene evolution with Peter Holland in Oxford. We wish them all continued success.

Submissions and goodbyes continue: while **Bruno Vieira** put finishing touches on his PhD submission, **Esteban Gomez Cifuentes** and **Raphaella Jackson** submitted their MSc theses, and **Leandro Santiago** is in the final push of putting together his PhD. Esteban rapidly found a job to work on human lipidomics and Bruno for a bioinformatics company. **Raphaella** will stay on for a collaborative PhD with Lee Henry here in London and several international collaborators.

The rest of us are also busy generating data, analysing, and writing. **Emeline Favreau** has been scouring the western United States for ants while the sequencer is running in UK, and **Carlos Martinez Ruiz** finishing a large dissection project before sending things off for sequencing. **Anurag Priyam** has been pushing compute clusters to their knees by running hundreds of genome assemblies.

We had a summer rich in meetings (IUSSI Brazil, ESEB, Royal Entomological Society) and look forward to another great meeting and catching up with old friends in December for NW European IUSSI!



Emeline Favreau from the Wurm lab out collecting.

Evolution, Sociality & Behaviour (ESB), Helsinki

Following the ending of CoE, TEAM::ANTZZ has gone through major changes. Our new group is called Evolution, Sociality & Behaviour, and includes also bird ecologists.

Perttu Seppä continues his efforts educating students on population genetics and studying conservation genetics of *Myrmica* and *Formica* ants and other topics. PhD student Sanja Hakala supervised by Perttu and

Heikki Helanterä is on her last year of studying dispersal and supercoloniality in *Formica* ants. In turn, Sanja has also been supervising two MSc students – Mats Ittonen graduated with good grades, and Rosanna Lindgren started her thesis work on queen execution in *F. aquilonia*. Also Mélissa Peignier from the University of Bourgogne visited us for a five months MSc project, on begging by *Formica* larvae, supervised by Heikki and our old friend Eva Schultner at Regensburg.

Jonna Kulmuni leads the project SpecIAnt with funding from HiLige and Horizon2020. She uses mound-building wood ants to understand the origins of new species and the consequences of hybridization. Post doc Pierre Nouhaud is leading efforts to build reference genomes for parental species and hybrids. Ina Satokangas has started a PhD on the role of gene networks in speciation, and Jack Beresford is in his second year of PhD aiming to get at the genes behind hybrid fitness. Monika Bhalke, Bendik Ferkingstad, and Janina Schönberger worked as interns during 2018 on the role of *Wolbachia*, mate choice and candidate gene evolution in speciation.

Dalial Freitak is now an associate professor at the University of Graz in Austria, and is moving her activities there. TEAM::BEEZ still continues with Dr. Franziska Dickel as a new group member, together with Matti Leponiemi, who has finished his MSc thesis, and plans to continue for a PhD. The group is now working on the PrimeBEE project, funded by BusinessFinland, with the aim to improve the efficiency of first ever vaccine developed for honey bees. Together with Heikki Dalial supervises Jason Rissanen's MSc thesis on ant-aphid-fungus-bean interactions.

Nick Bos has been working with Lotta Sundström, on the long-term data set on *Formica exsecta*, but he will soon start a postdoctoral position at the University of Copenhagen to work on fungus growing termites. He will remain affiliated with University of Helsinki to continue ongoing work. Claire Morandin continues with on her work on co-expression networks and caste differentiation. She received an EMBO fellowship, and will next year start work at Lausanne University under the supervision of Prof. Keller, but remain stationed in Helsinki. Helena Johansson has left the group for other challenges but will continue to supervise the final phases of Kishor Dhaygude's and Stafva Lindström's PhD-projects, together with Lotta Sundström. Unni Pulliainen is working hard on finishing her PhD thesis.

Lotta Sundström will be on research leave during the next year, to focus on all the manuscripts that remain unfinished from the CoE. Next field season will still see her doing field work at the Tvärminne zoological station for the long term project on *Formica exsecta*.

Helanterä lab (University of Oulu, Finland)

After a long long time in Helsinki, Heikki Helanterä is changing scenery, as he has started as a tenure track associate professor up in Oulu, Northern Finland (where we had the first snow last week)! My last year in Helsinki was busy with writing a popular science book on ants with an ex ant researcher and Helsinki colleague Katja Bargum, which will be out next spring (unfortunately for most of you, only in Finnish and Swedish).

But now it is time to thank all the amazing people who made science and life in Helsinki so rewarding. Many collaborations in Helsinki and Tvärminne will continue, and my main interests will still revolve around ecological, genetic and behavioural aspects of social evolution in ants – keep your eyes open for job ads in Oulu in the future as I start building my group. I am off to a flying start up North in a collaboration with Dr. Lumi Viljakainen and Ida Holmberg, on Ida's MSc thesis on population genomics of the Argentine ant.

IUSSI 2018 Guarujá meeting reports

David Collins

In 2014 Brazil hosted the FIFA World Cup. In 2015 they hosted the Olympic Games. This August, I was lucky enough to attend the most exciting large-scale international event of them all... the 18th World Congress of the International Union for the Study of Social Insects. The conference was hosted in the five star Casa Grande hotel in Guarujá, a seaside resort town surrounded by lush Atlantic rainforest in Sao Paulo state on the Brazilian East Coast.

We arrived in Guarujá at midnight and were awoken the next morning to a wonderful cacophony of exotic bird calls and songs. The scenery featured endemic parakeets, sunbird-like bananaquits and brightly coloured tanagers scrabbling with each other for access to a cluster of exotic-looking fruit trees

surrounded by a sea of palms. Dangerous looking caracaras brought carrion to rough nests high on electrical pylons throughout the city. Jewel-like swallow-tailed hummingbirds pollinated their way diligently through deep flowers lining the surrounding gardens. The sky was patrolled by soaring black vultures, and huge pterodactyl-like magnificent frigate birds making their daily pilgrimage out to sea to harass the local fishermen. The diversity of social insects in the area around our apartment was just as extraordinary, our first walk around town brought up football sized nests of *Agelaia* wasps lining the windowsills of tall apartment blocks, tiny snake-like desire paths in the grasses from the constant streams of *Acromyrmex* ants mining the local vegetation for their hungry fungus gardens, the concrete paving patrolled by viscous *Odontomachus* ants looking to snare insect prey in their huge trap-jaws, and a wiggling mass of fungus gnat larvae that moved together in a giant cohesive slug that really needs to be seen to be believed (seriously, google them).

Arriving at the venue on the first day we were greeted by the constant hum of busy *Meliponine* bee workers diligently harvesting the gifts of the local flora on the hotel grounds, and we were surprised by a resident pair of burrowing owls (true to their name they had dug out a large burrow beneath the local tennis courts) whose antics delighted conference delegates throughout the week. I was accompanied by Jenny Donelan, a technician in the UEA research group, who gave a talk on the first day on our current research: the relationship between fecundity and longevity in social and non-social insects. She talked in the 'Social Evolution and Life History Consequences' symposium and, as far as I can tell, her talk was very well received. By getting in early it afforded us both lots of time throughout the conference to discuss our ideas with attendees, several of whom had spoken in the same session, and it would be no exaggeration to say some of them were truly world experts on life history theory as it pertains to social insects. The talks and posters associated with this symposium were extremely informative, and I'm sure will prove vital for us to understand where the important similarities and, indeed the important differences, are between our two systems (bumble bees and *Drosophila*) and the systems used by other groups.

There were excellent talks throughout the week covering a whole range of social insect topics from chemical signalling to conservation biology, from behavioural ecology to social genomics. This was easily the largest conference I've been to, with 9 plenaries and 41 symposia. As always with conferences of this size, one has to carefully pick and choose which talks will be of the greatest interest to them. Often I would negotiate which talks to go to with other attendees, so we could fill each other in on any interesting talks that were missed due to inevitable clashes. As should be expected of a conference of this prestige, the plenaries were excellent, with speakers such as Ben Oldroyd (who's life's work has allowed him to come close to discovering one of the genes for altruism, surely the holy grail for any serious scholar of social evolution), Seirian Sumner (who urges us to keep using Tinbergen's four questions approach to our studies of social behaviour), and Elizabeth Tibbetts (who's talk on facial recognition in *Polistes* wasps was in equal parts entertaining and fascinating). Even when I was familiar with someone's work, it is exciting to hear them talk about it, and I always come away feeling like I've learnt something new. However, one of the highlights for me was a plenary by Professor Walter M Farina of the University of Buenos Aires, whose research I was previously unfamiliar with. He showed us his laboratory's extensive efforts to train honey bees to become more effective crop pollinators. To do this they had synthetically recreated the fragrances of certain target crops (providing data on almonds, sunflowers, and pears) and then exposed these mixtures to honey bee colonies (brought in to pollinate the crops), priming them to prefer collecting pollen from the target crops, causing them to have higher crop yields. Besides the plenaries, the regular talks and posters were of a very high quality and I enjoyed every symposia that I attended.

I too was lucky enough to give a talk on my previous research on the molecular genetics of caste determination in bumble bees. While it was on the last session of the last day (unfortunately someone has to take that spot), I still got to discuss some interesting ideas with Dr Etya Amsalem from Penn State, and Professor Guy Bloch of the Hebrew University of Jerusalem. While the main part of this project is mostly behind me, these discussions helped me think about some of the analyses that I still have left to do, helped me think about my interpretation of our data so far, and gave me increased drive for getting our papers out!

Unfortunately there was also a dark side to hosting the conference in such an exotic paradise. Throughout our time in Guaruja we felt a prevailing sense of unease and this was shared by many of the other delegates. Some of us were followed back to our apartment by strangers in the evenings, and we were also warned by friendly locals that it was too dangerous to go into certain areas. On at least two occasions we witnessed armed policemen drawing guns on suspects. We also spoke to one delegate who had been physically assaulted for his conference tote bag (luckily containing nothing more than the free notepad and pen provided by the organizers). In addition, Jen and I were caught in a car crash caused by our Uber

taxi breaking down in the middle of the motorway on a raised bypass over the Atlantic rainforest. Thankfully neither of us was injured.

While these experiences meant that we eventually left Sao Paulo on a slightly sour note, they did not detract from the conference itself, which was excellent from start to finish. Afterwards we continued traveling and were able to visit the Pantanal, the world's largest Wetland (about half the size of France), where we were enchanted by the playful but effective hunting tactics of a group of giant river otters, and by the sight of stalking jaguars creeping up on unsuspecting capybara. We were also awed by the splendour of macaws and monkeys in the Amazon rainforest where all thoughts of dangerous back streets and dodgy taxi accidents were quickly pushed out of minds. Coincidentally we ran in to several conference delegates (allowing us to continue our fascinating discussions of the life-histories and habits of social insects) in both the Pantanal and the Amazon for the two weeks that we travelled around Brazil afterwards.

So overall ('minor' incidents aside!) we had a great conference, and a great experience that I will surely remember and treasure for the rest of my life. I would like to thank the IUSSI conference organizers for allowing Jen and me to speak, and for putting together such a great program in general. I would also like to thank the NW European section of the IUSSI who granted me £340 to pay for conference attendance. I am optimistic that by attending this conference, and future conferences, and discussing the biology of social insects with so many new and old colleagues, we will continue to advance our understanding of this most fascinating and diverse group of animals.'

Ben Taylor

Thank you to the North-West European section for funding my travel to Brazil for the IUSSI meeting this year! This was a wonderful opportunity to share my research and enjoy the company of the social insect scientific community.

The organisation of the conference was excellent, and I was especially impressed by the diversity of symposia on offer. Although my own research primarily results to the evolution of social wasp castes, I was able to enjoy a huge range of inspiring talks on such diverse subjects as ant cyborgs, termite superorganismality, bee social immunity and the personality of woodlice. Life as a PhD is very tightly focused, and it was an enormous joy to be reminded of the passion and diversity of our community. It is also a pleasure to be able to finally put faces to so many distinguished names!

Thank you to the many people who gave feedback on my poster detailing my research into the effects of queen removal on *Polistes dominula* social structure. I am honoured to have been the recipient of the second-place poster prize at the conference, especially given the high calibre of the other posters I saw. I would also like to thank Phil Lester, who gave me the opportunity to give my first conference talk during his symposium after the scheduled speaker had to drop out. Although it was quite a panic trying to get a talk prepared at short notice, it was a great chance to practice my presentational skills! Thanks to the several audience members who gave me challenging and constructive feedback.

Guarujá is a peaceful and beautiful town. My first experience of Brazilian culture could not have gone more smoothly thanks in large part to the friendly and passionate people who showed us the best places to get Açai - and Caipirinhas! We were lucky enough to experience a couple of days' travel to São Paulo after the conference, visiting state parks, the Japanese quarter and the Museum of the Arts. Brazil was an inspired location for the conference and I cannot thank the organisers enough for their hard work to make this event possible.

Robin Southon

I should confess, whilst most from our section were arriving by plane on the Sunday night, I had an easier journey through the sugarcane fields of São Paulo state from the northern city of Ribeirão Preto (travelling with Seirian Sumner, Fabio Nascimento, and Tomer Czaczkes lab groups). Though numerous, the sugarcane eventually cleared as the bus snaked down the forested hillside path towards the coastal town of Guarujá for the International Union for the Study of Social Insects 18th Congress (hosted by the Brazilian Section of the IUSSI). All weary travellers were soon to be greeted by healthy doses of caipirinhas, and the conference was off to a good start.

The Monday began with a plenary talk from Ben Oldroyd, who made sure everyone was wide awake – playing the Sex Pistols, which paired well with work presented from his lab on mutant phenotypes expressed as anarchist worker bees. Having recently started research in wasp biocontrol, I decided to plant myself firmly in the ecosystem services symposium for the rest of the morning. Paul Eggleton started the symposia with a

helpful reminder of the four benefits of ecosystem services (supporting, regulating, provisioning, and the often forgotten cultural services) during his talk on termite services; the rest of the symposia was followed by talks detailing such services – and some extra advice from Adam Devenish, who suggested in his methodology on invasive ant-plant interactions in South Africa, that tuna and honey can be used as an alternative to lure ants (it smells better than cat food apparently!). Having indulged myself in the ground dwelling termites and ants, I spent the rest of the afternoon chasing bee and wasp talks – from Sandra Rehan’s work on the evolution of social traits in carpenter bees, Fabio Manfredini’s RNA analysis on honeybee waggle dancing, Mike Sheehan on novel social intelligence in *Polistes*, and Patrick Kennedy on altruism in fluctuating environments. Finally, the day was finished with a great plenary talk by Elizabeth Tibbetts, on her lab’s work in facial recognition and dominance-pattern signals of *Polistes* wasps.

Though the weather was showing no signs of brightening up, the talks during the rest of the conference remained strong. To name a few plenaries from a great line-up, Seirian Sumner presented research on wasps ranging from genomes to behaviour – fitted into Tinbergen’s four questions, and Theresa Wossler’s in-depth experiments described the sneak pseudoqueen behaviour of cape honeybees in *Apis mellifera scutellata* hives. Other talks throughout the conference included (avoiding a long list, as all talks were superb): Alex Walton, on how nutritional restriction increased measures of cooperation in larval honeybees and adult paper wasps; Koos Boomsma, on gallery nesting behaviour resulting in lifetime sterility in ambrosia beetle workers; Alessandro Cini, on the behavioural and physiological battle between social parasites and their paper wasp hosts. Poster sessions also provided great opportunities to delve further into research topics, with an excitingly strong wasp turnout (posters such as, Rafael Carvalho, on behavioural plasticity in the understudied *Mischocyttarus* wasps; Ricardo Oliveira, on shared endocrine control of fertility and honesty signals in *Vespula*; Ben Taylor, on caste plasticity in *Polistes*)... and as proof I didn’t just speak to other wasp enthusiasts, poster pitches by Ryan Brock (on social organisation in tree bumblebees) and Joanne Carnell (on the transmission of pathogens via flowers onto bumblebees) were on point!

The conference wrapped up with the official dinner, and sat between Patrick Kennedy and Raghavendra Gadagkar I learnt we shared many of the same field sites in Panama at one point in time, which supports the idea that Panama is the wasp-mecca for researchers. At the end of dinner, the band played us out with a mix of classics, and after learning and indulging so much during a weeks long conference, I hope that the organisers also learnt something from all of us as well – if you want to kick Europeans out at the end of the night you don’t start playing Aqua on the dancefloor.

I’d like to say thank you to the IUSSEI North-West European Section for funding my conference fee and accommodation costs, and hopefully see you all at the next one.

Veronica Sinotte

In August I attended IUSSEI’s 18th International Congress in Guarujá, Brazil with the support of an IUSSEI North-west European travel grant. There, I presented a poster entitled “The aminergic and olfactory underpinnings of self-exclusion by infected ants” that represented the culmination of my master’s thesis work at the University of Copenhagen’s Centre for Social Evolution. The congress served as an inspirational and valuable experience, filled with intriguing talks and posters that fostered engaging discussions in the international community. The plenary speakers addressed the breadth of research at the conference while revisiting concepts regarding altruism, behavioural ecology, and Tinbergen’s four questions, ideas which unite and underlie our work as social insect biologists. For me, the congress enhanced my passion for research and augmented my prospects as a young scientist. I received unique insights into my project, causing me to reflect on additional aspects related to neuroethology and social immunity. Also, like many attending the conference, I was able to bask in the rare chance to have unique, niche discussions; against the scenic coastal backdrop I talked over the functional role of cuticular sculptures, the disease tolerance strategies of a colony as a unit, and the similarities between the symbiotic bacteria in wasps and ants. Further, the congress exposed me to novel ideas and ongoing research across the world, expanding my horizons regarding the question and research group I will work with as I move forward with my career. Overall, I am thankful for IUSSEI’s support of my attendance, and I look forward to the next conference in San Diego.