#### Dear readers,

in order to achieve gender equality, we must all work together. Networks – especially women's networks – play an important role. They provide a support mechanism for women to share their ideas and get advice. Networks can form connections between women who face similar challenges. Therefore, they create an environment for professional and personal growth and contribute to more equality. Collaborative Research Networks at the University of Stuttgart jointly pursue gender quality in various ways. One way is by building and providing networks.

The fourth issue of the Pooling Info Letter presents the CRC 1333. The CRC 1333 encourages young women to pursue scientific careers. Women scientists at CRC 1333 receive support through mentoring opportunities and a specialized skill development program. In addition, the CRC 1333 is committed to the compatibility of family and work life. In this way, the CRC 1333 sets an example for equality.

Thank you for your interest and we hope you enjoy reading this issue.

Ele Lamanna

Dr. Ing. Grazia Lamanna Gender Equality Officer University of Stuttgart

# Spotlight on Equal Opportunity:

# The CRC 1333 under the microscope

Pooling Info Letter of the DFG-funded research networks at the University of Stuttgart

> lssue 4, January 2022

#### Content

- 1 CRC 1333 in Portrait
- 2 Equal Opportunity in the CRC 1333
- 3 Girls'Day Events for School Girls
- 4 Specialized Skills Development Program
- 5 Athena Group
- 6 Mentoring Experiences from the CRC 1333
- 7 Early Career Support and Master's Prize
- 8 CRC 1333 Female Group Leaders in Portrait
- 9 Compatibility of Family and Work Life

# CRC 1333 in Portrait

Molecular Heterogeneous Catalysis in Confined Geometries

In view of dwindling resources and increasing environmental restrictions it is crucial that chemical production processes, including catalytic ones, offer optimum results. Facing this challenge, our Collaborative Research Center (CRC) targets the rational development of heterogenized organometallic catalyst systems, which are conceptually derived from enzymatic biocatalysts.

Biocatalysts use 3D confined geometries of defined size, polarity (gradients) and tortuosity to accomplish the reaction of interest with outstanding selectivity and reactivity, mostly at room temperature and in water.

The CRC 1333 – Molecular Heterogeneous Catalysis in Confined Geometries aims to:

identify and understand confinement effects in organic and organometallic catalysts immobilized on different supports.
exploit the confinement effects for the rational development of molecular, heterogenized organic and organometallic catalyst systems with improved reactivity and selectivity.

#### Approach

To realize these goals, we create catalyst-support hybrids with organic and organometallic catalysts selectively anchored within mesopores of defined size, shape and polarity. Thereby, we create tailor-made confined geometries around the catalysts. The influence of this confinement on catalytic activity will be systematically tested and performance will be compared to that of the homogeneous analogue.

Careful analysis of the catalyst-support hybrids and simulation of the catalytic processes in the pores will give insights into how pore properties influence catalyst performance. This will ultimately pave the way to rational improvement of catalyst performance using confinement effects.

To fundamentally understand the role of the confinement in molecular heterogeneous catalysis this CRC 1333 has formed an interdisciplinary team of scientists from three different institutions in the first funding period:

- University of Stuttgart
- Max-Planck-Institute of Solid State Research
- University of Paderborn

The CRC 1333 is funded by the German Research Association (DFG) since July 2018.



**Prof. Dr. Michael R. Buchmeiser** Spokesperson of the CRC 1333 *Institute of Polymer Chemistry (IPOC)* 

+49 711 685-64075 michael.buchmeiser@ipoc.uni-stuttgart.de



Prof. Dr. Bettina V. Lotsch Deputy Spokesperson of the CRC 1333 Max-Planck Institute for Solid State Research Nanochemistry +49 711 685-64075 b.lotsch@fkf.mpg.de



# Equal Opportunity in the CRC 1333

In our CRC 1333, we actively provide equal opportunities to excellent researchers, irrespective of their gender and we are especially committed to furthering the compatibility of family life and an academic career.

In addition to the gender equality concept of the University of Stuttgart, the CRC 1333 has established its own guiding principles for gender and diversity. These were established early on, in February 2019, when project leaders of this CRC came together for discussions within the seminar "Gender Competence in Academia".

The primary goal of the CRC 1333 is to establish a culture of scientific curiosity and collaboration that includes and supports all researchers in their careers independent of their individual personal context. By implementing the above measures, we aim to encourage especially young female scientists to take responsibility as group leaders and/or professors, thereby increasing the number of women in leadership roles in science. This is also reflected in the particular engagement of our board members: Prof. Joris van Slageren is part of the diversity commission of the Faculty of Chemistry, Prof. Johannes Kästner's group has been recognized in the "Diversity promotes Intelligence" series of the University of Stuttgart as an exceptionally divers research group and our deputy spokesperson Prof. Dr. Bettina Lotsch is co-founder of the local Athena group that actively promotes equal opportunity and diversity at

the MPI-FKF.

To live up to these guiding principles, the CRC 1333 has implemented tailored activities, expanding the existing portfolio of measures for promoting equal opportunities at the University of Stuttgart. These include a wide range of services for female early career researchers in the network to facilitate and ensure professional success. Additionally, we are devoted to raising interest in the STEM fields – Science, Technology, Engineering and Mathematics – especially for school girls and to providing services to employees with parenting duties.

#### Our activities include but are not limited to:

- International Athena mentoring program for female researchers
- Tailored workshops for the CRC 1333's doctoral and post-doctoral researchers covering the spectrum from Leadership to Parent Coaching
- Women in Science Career Talks with renowned female scientists from our field
- Girls'Day workshops for school girls
- Parent-child room within the CRC 1333's central building on Campus

Additionally, the CRC 1333 participates in the initiative "Pooling – Synergies for Equal Opportunities." The pooling is an amalgamation of the DFG-funded research networks at the University of Stuttgart. We therein jointly pursue the goal of equal opportunities in science while making use of synergy effects.

#### As part of the Pooling we additionally offer:

- Day care places for kids up to 3 years
- Peer network for early career researchers
- Media materials of female scientists as role models
- Professional skills development programm including workshops and coaching

Please find a detailed presentation of our activities for equal opportunity in this info letter.

# Girls'Day - Events for School Girls

The nationwide Girls'Day campaign offers school girls the opportunity to become active and experience research themselves. The format has proven to be effective for promoting equal opportunities.

At the University of Stuttgart, women are underrepresented in scientific and technical fields. One strategy for recruiting young talents is to show girls the full range of career options available to them. The CRC 1333 has participated in this event series with a variable program within the first funding period.

As part of Girls'Day 2021 the CRC 1333 hosted the following three workshops:

# The soap lab: foaming, emulsifying, washing (grades 9-10)

The most beautiful and simple form of a foam are soap bubbles, which enchant everyone with their dazzling colors. We find foams in many areas of our lives such as bathing, solid shampoo or even in the form of milk foam. In the soap lab, girls explored the properties

of foams and experimented with foams with different properties. They also learned why a water strider can walk across the water in the lake, but not across the water in the bathtub.

Mixing oil and water is not actually possible and yet girls could experience together how they can be mixed. Mixtures of oil and water play a role not only in cosmetics (e.g. creams), washing processes (e.g. skin and hair, clothes or dishes) but also in industrial cleaning processes. In environmental protection, the miscibility of oil and water is desired for the remediation of oil-contaminated soils. In the end all members of the soap lab produced a shower gel and hand cream, using the knowledge they had gained about the properties of soaps. Substances needed to make the care products were sent in advance.

#### **Chemistry:**

Zeolites as high performance materials in washing, adsorption and catalysis (grades 9-10)



Zeolites are true all-rounders. They soften water during washing, they keep insulating glass windows clear, they cool and warm, and they help to extract as much gasoline as possible from petroleum.

An examination of zeolites in the laboratory provides insights into a typical chemistry lab. So that girls could also experiment at home, some materials were sent by mail.

#### A Day as a Solid State Researcher - Background on Conductive Solids in Everyday Life and Building Your Own Battery (grades 5-10)

Lithium batteries that power electric cars, super-

conductors that conduct electricity over long distances without loss, solar cells that harvest the sun's energy – all examples based on the electrical conductivity properties of solid materials.

Scientists at the Max Planck Institute for Solid State Research



are working on such phenomena. Solids include metals, ceramics, but also crystals of organic molecules. Solid state researchers want to understand how the structures of these materials influence their electrical, mechanical or magnetic properties.

Scientists offered an insight into their day-to-

day work at the institute. Program highlights:

Do-lt-Yourself experiments such as a lemon battery and a Q&A session with chemists and physicists.

# Specialized Skills Development Program and Networking

For their female researchers, the CRC 1333 offers workshops that are specifically tailored to their wishes. The workshops offer an opportunity to develop career-relevant competencies and soft skills. For doctoral researchers, we especially focused on leadership skills with a seminar series and we offered resilience training in peer groups.

#### (Self-)Leadership development program for female scientists

Every leadership begins with self-leadership. This understanding guided the course of our leadership seminar series that was established in 2019 together with Dr. Sabine Horst from QuinteSentio.

Since then, five seminars took place and have given our female doctoral researchers a broad overview of aspects, important to be a great leader and to successfully working together in teams. So far, the participants developed their individual understanding of leadership, they learned to distinguish between functions and roles and how they can actively and appropriately change their behavior and take on different roles. They understood how expectation management is possible, what tasks and duties each role entails, and were able to experience the application of leadership tools in practice-oriented cases.

An essential part of the CRC 1333 is the collaborative work in interdisciplinary teams. Which dynamics influence the workflow of such a team? What is a team as opposed to a random group of people?

Misunderstandings, dealing with conflict September 11 and 18, 2019

> Leadership in academic hierarchies and projects

successful

July 29, 2019

working strategies Effective and lead to successful collaboration. This communication included also solving a puzzle game as different working strategies had to be tested and compared. Key to success was always effective communication. Therefore, our researchers discussed what contributes to successful communication and which pitfalls should be specifically avoided. And as even the most productive teams experience conflicts, problem-solving techniques were also part of the pro-

gram.

Participants of the sem-

inars evaluated which

Collaboration, working in (intercultural and virtual) Teams

Who am I when and where? - The challenge of acting in different roles: mindful (self-)leadership April 13 and 29, 2021

October 13, 2020

#### Peer Groups on "Resilience in Academia"

The workshop series "Resilience in Academia" for female doctoral students started in August 2020 and was extended in 2021 after positive feedback. The series provides participants with skills and strategies that enable them to deal with crisis situations. These strategies were learned and applied in small groups, allowing for independent application of these methods.

#### Skills and strategies for crisis situations

Through exercises, self-reflections and reflections in the group, the participants were able to share their experiences on resilience factors and receive new impulses.

In addition, the participants realized the importance of one's personal attitude and were introduced to tools such as giving positive feedback and the idea basket.

#### Facing common challenges together

#### Relationships of trust

A strong relationship of trust has formed within the established groups, which is indispensable for peer coaching.

Each of the participants has established a network to turn to for advice and support.

Thus, participants decided to maintain contact within the small groups and to refresh the learning content on a regular basis.

shar

Through the course, participants learned that they often have to deal with similar difficulties in everyday work life, whether it's dealing with

conflict situations or hiding in a victim role, or uncertainty about the future.

Discussing the many common yet often perceived als individual challenges had a reassuring effect. Furthermore, participants could offer tips and suggestions for solutions in the form of peer coaching.



#### **Individual Coachings**

Since August 2021, we can offer individual coachings to all our female scientific staff members. The offer is organized by the initiative "Pooling - Synergies for Equal Opportunities" of the research networks funded by the DFG at the University of Stuttgart.

Two doctoral researchers of the CRC 1333, Karina Abitaev (project A07) and Carolin Rieg (project C01) made use of the offer to find orientation for their career planning, following their - soon to be finished - doctoral research. Both decided for an individual career coaching with Choreoo.

#### Psychological state-of-the-art test as basis

Tasks & Projects Motives & Feelings

People & Work Relationships

As a basis for the online "Perspectives Coaching" coachees have to complete a state-of-the-art test procedure on their career preferences. This is the Talent Q ,Dimensions' test from the renowned provider Korn Ferry. The result of the

test provides them with feedback

on personal attitudes in the areas of ,people and work relationships', tasks and projects' and ,motives and feelings'.

#### Mapping preferences

This procedure is designed to be highly job-related. It maps preferences against the background of the answers of thousands of other people rather than evaluating strengths and weaknesses.

## Shaping the next professional phase

On the basis of the results of the online survey, coachees then have a personal, confidential online coaching conversation lasting about two hours.

They will receive the results report at the beginning of the conversation with their coach.

Together, they go through the results and look at the current professional situation and experiences. They then look ahead and make plans to shape the next professional phase.

Both of our coachees agreed to have taken away important insights on possible professions based on their preferences that they can pay attention to in their future job selection.

# **COACHING**

for female scientists

Currently there are three more coaching formats available for female scientists of the DFG-funded research networks:

#### **Impulse Coaching**

Special format for specific, practical concerns or just to get to know the method. One session of 90 minutes.

#### **Individual Coaching**

In-depth support for more complex concerns and personal development processes. Up to 5 sessions of 60-90 minutes each.

#### **Equality Coaching**

Special focus on issues which may be addressed with a gender and diversity perspective. Also for developing EO-strategies as a leader.

> For more information please contact Sabrina Schopf: pooling@cg.uni-stuttgart.de 0711 685 84024

# Athena Group

Promoting equal opportunity in collaboration with MPI-FKF and IQ<sup>ST</sup>

Mentoring and networking are invaluable tools for promoting junior talent. Therefore, the CRC 1333 happily joined the Athena group of Max-Planck Institute for Solid State Research (MPI-FKF) in early 2019. Therein, the CRC 1333 has co-initiated a subject-specific mentoring program for female early career researchers with additional opportunities for networking.

The Athena Group of the MPI-FKF was launched in 2018 to foster exchange among female scientists and support women in science. The group is a local multi-career-level network that benefits from a bottom-up approach, i.e. from the involvement and commitment of all members (regardless of gender), who are interested in supporting female scientists.

The CRC 1333 joined the group by invita-



tion of our deputy spokesperson Prof. Bettina Lotsch, director at MPI-FKF and co-founder of Athena-FKF. The Center for Integrated Quantum Science and Technology (IQ<sup>ST</sup>) completes

the group. This provides the opportunity for vivid exchange and networking between the three different research communities.

## Mentoring

Our mentoring program is tailored to the particular needs of the female scientists in chemistry, materials sciences and physics. They receive individualized support for their personal and career development by a mentor. Mentors of

both genders and preferably one step ahead of their mentee in their careers are chosen from a large pool



of possible candidates from MPI-FKF, CRC 1333 and IQ<sup>ST</sup>. From the CRC 1333 team, three early career researchers joined as mentees and eleven declared to be possible mentors.



#### Networking

Researchers of all genders can join the Athena-FKF monthly themed networking coffee breaks. In these informal discussion rounds a wide range of topics are covered, such as:

- How do you attribute your success? Test your level of Imposter Syndrome!
- Implicit Bias guilty or not guilty?
- Do you take your Laptop on vacation?
- The Gender Quota

Unfortunately, the COVID-19 pandemic put a temporary break to this practice.

#### Seminar series

A series of seminars by successful and inspiring role models in science and industry offers insights in career paths and other experiences in academia. After the talks, all attendees have the opportunity to interact with the speaker in an informal setting.

I got a lot of tips that I would have never been able to figure out just by googling."

# **Mentoring Experiences from CRC 1333 Scientists**

#### Sherri Liu, M.Sc.

Doctoral Researcher project A02

At first, my mentor and I met about every 2 or 3 weeks and when I got more comfortable handling issues arising during my PhD, we met every 2 to 3 months. We exchanged our current perspective on research, science, and doing a PhD. I felt comfortable to share my experiences and thoughts regarding my PhD life. **My mentor really listened to me and genuinely cared about what I was going through**. He is very empathic and shared with me something called "Imposter Syndrome" as he noticed that I could be suffering from this like he once had.

During the COVID-19 times, he checked in to see how I was and if I would like to meet online. It was helpful, that he is a foreigner in Germany. **We could connect in terms of feeling isolated in a different working culture**. He gave valuable advise on how to cope better with this isolation. Topic-related, for me, it was not important whether he shared the same topic as me as I never felt that it was necessary during our discussions. We barely

discussed scientific questions as I felt I could handle those questions on my own. However, he shared with me how he was handling his scientific inquiries and I could learn from his approaches. Overall, I would recommend this program to anyone starting out in the beginning of their PhD because I got a lot of tips that I would have never been able to figure out just by googling.

#### Dr. Johanna Bruckner

Group Leader Seed 03, Postdoc project A04

I experienced the Athena Mentoring Program as a mentee and a mentor, and appreciated both a lot. **Participating in a program of this kind I highly recommend to everyone.** It is always good to have someone to talk. Even more so, if this person can relate to what you are going through at that moment and where your path will lead you in the future.

> As a mentee I experienced that an outside view can be very helpful. It is a great benefit to talk to someone who is experienced in science but is not your boss. My mentor gave me good tips and information about available funding, career planning and publishing results. **My mentor helped me finding the right focus for new projects**. She is a highly esteemed part of my professional network and I hope she will stay a part of it for a very long time.

As a mentor I learned that mentoring can be fun. It is quite a rewarding task. Usually I relate well to the concerns of my mentee, as I had been in a similar situation not too long ago. With just a little bit more of experience, it was often easy for me to provide important information, establish a connection to someone or change their perspective. There is no need to struggle on your own, when there are people who are willing to help.

"Mentoring is fun and quite a rewarding task."

# Early Career Support and Master's Prize

#### Seed Funding Initiative

The Seed Funding initiative aims to establish new directions of research within the framework of the CRC 1333. Specifically young researchers within the CRC can apply. The grant enables them to follow new paths and find out if a new research questions should be investigated further, potentially in the next CRC funding period.

The grant includes one year of personnel funding for a doctoral researcher and required materials expenses. So far, six researchers received seed funding, half of them were women.

Inspire to aspire – "Women in Science Career Talks"

The "CRC 1333 – Women in Science Career Talk" series aims to make outstanding female scientists from research fields related to the CRC visible as role models. It should give young researchers an idea of the individual career paths of our guests and encourage them to consider pursuing a career in academia irrespective of their gender. Following CRC lectures everyone regardless of their

### CRC 1333 Master´s Prize: Katrin Gugeler

Katrin Gugeler is doctoral researcher in our CRC project C04 and also a former PhD representative. In recognition

of Katrin Gugeler's special commitment even before her doctorate, she received the CRC 1333 Master's Prize in 2021 for her master's thesis on "Simulation of Rh-catalyzed asymmetric arylation reaction mechanisms" which enriched the research project with relevant findings.

She found the natural sciences particularly interesting even in school. So she chose chemistry because it offers the greatest variety. You get a lot of exciting insights - whether in the lab, where you can experience chemistry in practical experiments, or in the simulation, where you have the opportunity to take a really close look on mechanisms.

Next year, she will complete a 3-month research stay in Oslo from the beginning of February to the end of April. There she will deal with the exciting and current topic of "Machine Learning" and its application in catalysis. She hopes to learn new techniques and apply them to future projects within the CRC 1333.

gender is invited to ask questions about possible career paths and advise on how to get on track so career trajectories can align with individual ambitions.

Previous lecturers include:

- Prof. Dr. Tanja Weil, MPI for Polymer Research
- Prof. Dr. Vera Krewald, Technical University of Darmstadt
- Prof. Eva Hevia, University of Bern
- **Prof. Dr. Angelika Brückner,** *Leibniz-Institut für Katalyse (LIKAT)*
- Prof. Kristina Tschulik, Ruhr Uni Bochum

# CRC 1333 Female Group Leaders in Portrait

The CRC 1333 involved five female project leaders within the first funding period

#### Dr. Johanna Bruckner

Johanna Bruckner is a junior group leader at the Institute of Physical Chemistry of the University of Stuttgart, PI of project Seed 3 of this CRC and designated PI of the CRC 1333 project A04 for the second funding period.

Her research focuses on the fabrication and characterization of hierarchically structured functional materials, such as mesoporous silica or photonic films. As a central synthetic tool, she utilizes the self-organizing properties of lyotropic liquid crystals.





of the CRC 1333 as researcher in 2018, at the beginning of our first funding period, following a postdoc at the University of Luxemburg and an industry position as a development engineer at

Within the CRC 1333, she quickly started building up her own group. Her joint proposal together with Dr. Stefan Naumann (project A06) on "Tailor-made Reverse Pluronics - A tool for advanced mesopore design" received funding in 2019 as project Seed 03. In 2021, she was accepted as a fellow within the "Margarete von Wrangell" program, which will further support her on her career path towards habilitation and a professorship.

#### Prof. Dr. Maria Fyta

Maria Fyta is a project leader of the current project C06 in the CRC 1333 working in the field of computational physics.

Her work is purely computational. She simulates materials and biophysical systems by a bottom-up approach with a variety of methodologies ranging from classical and semi-empirical to quantum-mechanical and multiscaled

> Dr. Johanna Bruckner and Prof. Dr. Maria Fyta have been portrayed in a film to inspire young women to pursue a career in science.

schemes. Applications of her work can be found in materials technology, e.g. hard-coatings, spin qubits, sensors or biotechnological applications like ultrafast DNA sequencing.

Within the CRC 1333 Maria Fyta received additional funding within the Seed Funding scheme for her project proposal

"Influence of ionic-liquids and confinement on organometallic catalysts" (Seed 2). Starting out as a junior professor within this CRC, the mother-of-three is now apl. Professor at the Institute of Computer Physics of the University of Stuttgart. In 2022 she will be starting her professorship at the Faculty of Mathematics, Computer Science and Natural Sciences of the RWTH Aachen.

# **Compatibility of Family and Work Life**

Reconciling family and work life can be a challenge. The CRC 1333 and the University of Stuttgart actively support the compatibility of work, study and family. Since 2020 a parent-child work space is available in the CRC 1333's central builing on campus Vaihingen

The University of Stuttgart is committed to further developing existing successful support services for employees and students to make working and

studying conditions more family-friendly. By creating a family-friendly university structure, it is not only university employees with family responsibilities who benefit. The university is more attractive to and retains highly qualified employees and reduces family-related dropouts. All members of the University of Stuttgart are responsible for implementing the goals and standards, especially the managers. Our university management actively supports the compatibility of work, study and family. Like the saying "It takes a whole village to raise a child" indicates, successful compatibility requires that the supervisor does not dismiss the topic of family as a purely private matter, but sees family tasks as part of the employee's obligations and take them into account in the dialog about work goals and career development. Managers are therefore supported in family- and health-conscious leadership. Since the summer of 2020, employees and students of the University have

access to a fully equipped parent-child room on the Vaihingen campus, which was co-financed by the CRC 1333 and its DFG equal opportunity funds.

In the event of childcare shortages, the room provides the opportunity to fulfill university responsibilities while simultaneously caring for the child in an appropriate space.

The parent-child room is located in the building Pfaffenwaldring 55, 7th floor, room 7.101 and can be reached by elevator. You can use the room once or several times - only for a short period or gladly for a whole day. You can ask for a key with the Secretary Office of the Dean, Mrs. Monika Carey, in room 7.106, or directly with our CRC 1333 secretary Kamila Parastatidou, in room 0.833.

Pfaffenwaldring 55, 7th floor For a key please ask Monika Carey (room 7.106) or Kamila Parastatidou (room 0.833)

# In the next issue...

...we put the Cluster of Excellence 2075 *Data-Integrated Simulation Science - SimTech* under the microscope.

### Impressum

Herausgeberin Universität Stuttgart Gleichstellungsreferat Service Gender Consulting

Redaktion Dr. Elisabeth Rüthlein Shima Hemati Sabrina Schopf Ulrike Stoll

Gestaltung Sabrina Schopf

#### Haftungsausschluss

Das Gleichstellungsreferat der Universität Stuttgart erklärt hiermit ausdrücklich, dass zum Zeitpunkt der Linksetzung keine illegalen Inhalte auf verlinkten Seiten erkennbar waren. Wir haben jedoch keinen Einfluss auf deren Gestaltung und Inhalt und übernehmen trotz sorgfältiger inhaltlicher Kontrolle keine Haftung für die Inhalte externer Seiten. Für den Inhalt der verlinkten Seiten sind ausschließlich deren Betreibende verantwortlich. Das Gleichstellungsreferat übernimmt keinerlei Gewähr für die Aktualität, Richtigkeit, Vollständigkeit oder Qualität der bereitgestellten Informationen. Die Verwendung der Inhalte ist an das Urheberrecht gebunden.