

# CCR Fellows & Young Investigators Newsletter

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## CCR-FYI Newsletter Team

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CCR-FYI Association is supported by the NCI Center for Cancer Training (CCT) and CCR Office of the Director.

*While we still enjoy crisp and chilly days interspersed with tastes of Spring you, Fellow Reader, can be entertained and inspired by interesting new articles about career advancement and the life of scientists. In this edition of the Newsletter, we share the benefits of getting involved with various peer groups, tips on how to build a professional network, resources for your mental health, and much more!! ... And don't forget to check out the flyers at the end of this document for all the ways you can be involved in all the exciting and enriching activities of the CCR-FYI.*

*I hope you enjoy reading the Winter 2022 Newsletter. – Alida Palmisano (Editor-In-Chief)*

(Background image created with BioRender.com and Photo by guille pozzi Unsplash. Personal pictures from Editorial Team and people included in various articles.)

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## Important resources: Spotlight

- Francis S. Collins, M.D., Ph.D., stepped down as NIH director on December 19, 2021, after more than 12 years at the helm. A physician-geneticist, Dr. Collins took office as the 16th NIH Director on August 17, 2009, after being appointed by President Barack Obama and confirmed by the U.S. Senate. The longest serving presidentially appointed NIH Director, Dr. Collins' impact on biomedical research and the health of the nation is difficult to overstate. More than 100 prominent figures from around the world created videos to pay tribute to Dr. Collins and wish him well as he transitions back to working in the lab at the National Human Genome Research Institute (NHGRI) and contemplates his next career steps. You also can watch individual videos at this link <https://www.nih.gov/farewell-dr-francis-collins>
- The UNITE initiative launched The Power of an Inclusive Workplace Recognition Project to diversify the portraiture within NIH buildings and digital spaces to recognize the contributions of all NIH staff and engender a spirit of inclusion by acknowledging the rich diversity of our NIH workforce. Read more about it at this link <https://www.nih.gov/ending-structural-racism/power-inclusive-workplace-recognition-project>
- CCR Grand Rounds – “*Persisted: Breaking Barriers to the Advancement of Women in Science*”, by Cassidy R. Sugimoto, Ph.D., a Professor and Tom and Marie Patton School Chair in the School of Public Policy at Georgia Institute of Technology. Her research examines the formal and informal ways in which knowledge is produced, disseminated, consumed and supported, with an emphasis on issues of diversity, equity and inclusion. Watch Dr. Sugimoto presentation from Feb 11, 2022, archived in the CCR Grand Rounds website: <https://ccrod.cancer.gov/confluence/display/CCRGREL/CCR+Grand+Rounds>

MARK YOUR CALENDARS FOR THE 2022 CCR-FYI Colloquium

**Translating Cancer Research  
from Bench to Clinic:  
The Real Deal!**

Analysis ← Testing → Treatment

**April 20<sup>th</sup>-21<sup>st</sup>, 2022**  
**Virtually**  
(Due to the recent increase of COVID-19 cases and uncertainty about the spring's NCI guidelines about in-person events).

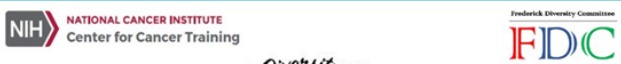

Oral and Poster Presentations • Career Networking and Development Workshops • Keynote Speakers • Outstanding Postdoctoral Fellow Presentation • Survivor Speaker

**Registration and abstract submission is open!**

<https://events.cancer.gov/cct/fyi-colloquium>

**Registration Deadline without Abstract: March 14, 2022**

For questions please contact Maria Moten at [NCICCT@mail.nih.gov](mailto:NCICCT@mail.nih.gov)

**FDC Mission and Goals:**  
Celebrate diversity and inclusion on the Frederick campus  
Promote productivity, work-life balance and career satisfaction

**Meetings:**  
every 3<sup>rd</sup> Friday of the month at 1pm

**Benefits:**  
Personal and Professional Development  
Career Exploration and Enrichment  
Networking | Mentorship

**More information can be found at**  
<https://ncifrederick.cancer.gov/Diversity>

## Building a Professional Network

by: Mary Grace Katusiime

In addition to achieving the goals of your research projects, building a network of professional relationships is one of the most beneficial ways to invest your time as a trainee. Your network will remain with you long after the fellowship ends, and it becomes an invaluable resource as you advance in your career. Networking, simply put, is strategic relationship building. It involves both establishing the connection and maintaining the relationship. As the name suggests, there is a bit of “work” involved in networking but equipped with the necessary tools, it does not have to be as daunting as it may sound – especially if you tend to be more introverted.

Your professional network serves multiple functions. It gives you the opportunity to grow your knowledge base and enhance your current competency by learning from field experts. It is a great way to find mentors to guide you through your career. It can also help you in the process of figuring out your next steps, particularly through informational interviews – more on this later.

According to a U.S. Bureau of Labor Statistics study, 70% of jobs are never advertised: this means that there is an invisible job market where employers hire people that come recommended from personal networks. When you are job hunting, having a strong, diverse network makes you more likely to hear about prospects. In fact, many job prospects already currently exist within the third level of your network i.e., somebody who knows somebody who knows you. This means you may never directly be in contact with the opportunity, but your network may be far reaching enough that it gets you in the door.

### How do I start building my network?

#### 1. Establish the connection:

To build a quality network, start early and do it often. Our networks are usually bigger than we realize. You’re probably in touch with former professors, classmates, friends, family, members of common interest groups – these are all valuable relationships that form part of your network. The people you already know become a resource when you want to expand your network because they can introduce you to the people they know.

In case you do not know anybody who can introduce you to a potential contact, it is possible to take the “cold-contact” approach. Conducting informational interviews is one way to do this. It is particularly valuable for learning about different career trajectories, daily job realities and how these may align with your interests, skills, and values. To start, send a brief email (or message on LinkedIn) expressing interest in a paper they may have written, talk they have given or express curiosity about their career trajectory. Ask for a few minutes of their time (no more than 20 minutes) to discuss three or four specific questions. Aim to have the meeting “in-person” if possible (via Zoom, or other video options – in the age of COVID-19). Before the meeting, prepare to have an informed conversation. Compose a concise description of your background, skills, and career interests (your elevator pitch) and practice to keep this no longer than 1 minute. Do your research on who you will be talking with by searching their LinkedIn, company profile, recent talks, publications, and any other career information you may find. Use

this information to prepare no more than 3 questions for discussion. Avoid questions that are obvious from their online profile. Instead, aim to learn more about the journey and valuable life experiences behind the public profile. Remember to always: (i) show that you respect their time by sticking to the agreed meeting time-frame (no longer than 20 minutes) unless your contact wants to take the conversation further, (ii) end on a reciprocal note by asking if there is any way you can be a resource for them, (iii) express your gratitude for their time and follow up with a 'thank you' email.

Besides the "cold-contact" approach, there are other avenues to grow your network organically. Joining committees like the CCR-FYI (<https://www.cancer.gov/grants-training/training/resources-trainees/get-involved/fellows-young-investigators-association>), interest groups, journal clubs, and attending conferences, are all good ways to meet people outside of your immediate circle and may even provide opportunity for peer networking. Having peers in your network is incredibly valuable for your trainee experience. They are closer to your career stage, can relate with your experiences and point you in the direction of resources you may not be aware of.

A tip when growing your network: Have an updated version of your CV (or resume) ready

and make sure that your LinkedIn and other social media are professional and a reflection of how you want to be perceived.

## 2. Maintain the relationship

Having a healthy network means maintaining authentic relationships. It helps to aim for quality over quantity - having a few good connections rather than many shallow ones. View your professional relationships as long-term investments, you have to put something in, to reap the rewards later on. This means building rapport first, having loyalty, mutual understanding and trust established before asking for favors.

Reciprocity is another vital ingredient - the give and take. See it as your role to add value to the relationship. Even when there is a power difference, something as simple as sharing an interesting paper or providing feedback on advice they gave you, can go a long way in maintaining the health of the relationship.

Lastly, staying in touch is key. This can be as easy as catching up a few times a year, sending a holiday card or keeping your network updated on your recent job change. Make it a weekly goal to grow or maintain your professional relationships. Chances are, you'll look back on your trainee experience and be glad you made the investment!

## The Education Outreach Program

by: Cathleen Cullen

The Education Outreach Program (EOP) introduces Elementary and Middle School students to scientific concepts through hands-on experience that just might be a catalyst to science careers. This program aligns with the National Cancer Institute's (NCI) overview and mission, and focuses its efforts on members of populations currently underrepresented in advanced academic programs. The EOP visits libraries, homeless programs, The Boys and Girls Club, Title One Schools, just to name a few. This program is continually adding more groups to this list, as one of the program goals is to inspire future scientists. The EOP of NCI at Frederick builds scientific literacy to the local community through partnerships with local schools and community groups.

The EOP is delivered by volunteers, including scientists and NCI employees who work in administrative positions. Volunteers also come from local colleges, Science National Honor Society and National Honor Society chapters at Frederick County Public Schools (FCPS) high schools, and the Werner H. Kirsten Student Internship Program at NCI. There are several opportunities for volunteers to support the EOP.

1) Personal engagement is a wonderful way to reach students. This entails visits to local schools and community programs.

2) Lesson development and curriculum writing are additional ways volunteers can become involved in outreach. These lessons can complement a volunteer's individual interest and field of expertise. Original lesson ideas are always welcome!

3) Virtual programming from a lab or office is another way to connect with students. This platform offers a great opportunity to share education, career path, and job details with students.



In the picture: ***Dr. Chanelle Case Borden speaks to FCPS Middle School students about her education and career path.***

The EOP consists of both one-time visits and long-term programs. Over the past two years, the program has added long-distance learning and virtual lessons to their offerings.

One-time visits include participation in school-based or community events. An example of this is our participation in school STEM (Science, Technology, Engineering, Math) community nights. During these events, the EOP hosts a table with hands-on science experiments. The activities are developed in collaboration with schoolteachers and administration. These events provide an opportunity for the EOP to reach a large group of students. They also provide our volunteers the occasion to answer questions,

and engage in casual, informative scientific conversations with students and families.

Long-term programs give the EOP a chance to create consistent relationships with students, while building upon past lessons and activities. An example of this is our Science Fair Club. This after-school program introduces participants to various science lessons and experiments. Students narrow down what activities interest them the most and through guidance provided by volunteers, learn the steps needed to create their own science fair project. The program culminates with a scientific showcase attended by parents, school staff, and local community members.

Along with the rest of the world, the EOP faced its struggles as COVID restrictions abruptly cancelled in-person outreach events. Through this shift, we have discovered new and creative ways to reach local students. One new initiative was the creation of "Science Kits". These kits were developed to provide programming in a long-distance manner. The individual kits are comprised of materials that complement a guided scientific lesson. Schools and program directors can introduce lessons, while each student uses materials from their individual kits. Detailed directions are included, giving students the opportunity to complete lessons independently. The EOP leads these lessons either in face-to-face or virtually, depending on the teacher's preference.



*In the picture: EOP volunteer, Melissa Girard, introduces a hands-on science activity during one of our Middle School STEM events.*

The EOP serves an important purpose as it introduces students to science through hands-on lessons and activities. This engagement encourages students' interest in future class and career choices as it inspires future scientists! Focusing on the present, while keeping an eye to the future, the EOP has used this time to develop new and exciting partnerships. Updated programming that includes both virtual and in-person elements have been developed. Many new lessons that incorporate outside learning opportunities have been created, which will provide hands-on learning to students outside the classroom walls. If you would like to learn more about volunteer opportunities or have questions about the Education Outreach Program (EOP) feel free to reach out to Cathleen Cullen ([Cathleen.cullen@nih.gov](mailto:Cathleen.cullen@nih.gov)).

More information is provided in the links below

<https://www.cancer.gov/grants-training/training/at-nci/eop>

<https://ncifrederick.cancer.gov/news/feature/eo-pvolunteersneeded.aspx>

## FAES offers *Talkspace*- accessible and free mental telehealth

by: Sunita Chopra

To say that we are living through stressful times would be an understatement. COVID-related stresses and anxieties are everywhere. On the other hand, living and surviving in a fast-paced, competitive, and results-oriented culture has been and will always be challenging. Often one finds oneself questioning the purpose of it all. Why the mad rush? Where are we racing to? What is this grand prize that we are all desperately struggling for? Why are we trying to prove ourselves? What are we afraid to lose or desiring to gain? As if these instances weren't enough to induce panic attacks, we have added angst from families, relations, coworkers, friends, and foes alike. While we all feel lonesome and lost at various stages of our lives, that lonesome and desperate feeling has become constant in the current times. Some of us may have people around with whom we can share our fears and traumas while others wish they could voice their problems to another person; if only there were patient and compassionate ears willing to hear them out. Fortunately, all hope is not lost! Professional support exists for those who require it and are willing to overcome the stigma attached to it.

The Foundation for Advanced Education in Sciences at NIH (FAES@NIH) understands the need for affordable mental health. Hence, their laudable plan enables participants to see any mental health provider across the US with a co-pay of just \$15. All other expenditure is reimbursable. To make it even more accessible and easier to find and interact with mental health care providers, FAES has partnered with *Talkspace*. *Talkspace* is a leading HIPAA (Health Insurance Portability and Accountability Act)

certified telehealth brand providing both psychotherapy and psychiatry services for the last eight years. HIPAA certification ensures patient privacy and confidentiality. *Talkspace* does not share user information with employers. Evidently trusted as a leader in digital mental healthcare, *Talkspace* has been co-opted by many leading businesses and institutions to enable their employees and students to connect to licensed mental health providers from the safety of their homes.

As part of the comprehensive plan reached between FAES and *Talkspace*, all plan participants at NIH and their dependents can utilize the platform for their needs on their preferred devices (iOS, Android, and Web). One can register at [talkspace.com/FAES](https://talkspace.com/FAES) anytime, there is no open enrollment period. Three services are being offered.

1. ***Talkspace* Therapy** is available to plan participants and dependents (ages 13+). On registering for therapy, the app will match you with licensed therapists per your choices. You can start exchanging unlimited texts with them right away. Therapists are available to support you five days a week. One can schedule up to four live video sessions per month with their therapists, too.
2. ***Talkspace* Psychiatry** is provided to plan participants and dependents (ages 18+). The *Talkspace* psychiatric providers can prescribe medications as part of your treatment. The plan includes 13 live video sessions but does not provide unlimited texting option.
3. **Relationship Support** is provided through the app "Lasting from *Talkspace*". "Lasting"

is a self-paced guided couple's counseling app. Each partner completes a brief 25-question assessment. "Lasting" matches couple's responses and identifies areas of agreements and disagreements. Besides, the app also recommends personalized relationship health plans.

Michel E. Ochoa, Insurance and Benefits Program Director, FAES ensures that they are committed to providing the best support to participants. She encourages fellows to make

the best use of *Talkspace* and recommends contacting them at [FAESinsurance@mail.nih.gov](mailto:FAESinsurance@mail.nih.gov) for any questions and queries. For more information on *Talkspace*, kindly visit <https://faes.org/content/explore-insurance-plans>.

The writer's personal experience using *Talkspace* has been fulfilling and she knows others who have found the platform immensely useful too. Take it from those who have overcome their hesitation to seek help - it is worth the effort.



## Getting Involved: A Postbac Experience

by: Knicki Bergman

Hi, my name is Knicki Bergman, and I have been working as a postbaccalaureate fellow at the National Cancer Institute (NCI) since May 2020. I have been an active member of the Center for Cancer Research Fellows & Young Investigators (CCR-FYI) Steering Committee and CCR-FYI Colloquium Planning Committee since August 2020.

Starting your first job out of college is already a difficult adjustment, and I am sure many other fellows can agree that this adjustment has been made even more difficult by the COVID-19 pandemic. For the first three months of my fellowship, everything was still being conducted fully remotely, so the only people I knew were the five other people in my lab. I quickly found myself feeling disconnected from the greater NCI community and missing those deeper connections you make by seeing people every day in the lab, meeting people at seminars and conferences, or simply by running into other fellows in the hallway.

I was not sure how to build connections in this new, virtual workspace, so I reached out to my mentor, explaining how I felt. My mentor, Dr. Amy Funk, was an active member of the CCR-FYI Steering Committee, and recommended I attend a meeting to see how I would like it. She shared with me her experience of meeting several people through the CCR-FYI Steering Committee, including postdoctoral fellows, postbac fellows, members of the NCI leadership, and even cancer researchers from institutions outside of the National Institutes of Health (NIH). She also described the leadership opportunities available within the steering committee and said these would be great

experiences to include on my resume as I prepared to apply to graduate school. My interest was piqued, so I attended the next meeting.

Thinking back, I did not anticipate getting as involved in the CCR-FYI Steering Committee and Colloquium Planning Committee as much as I have. Admittedly, I felt intimidated when I first started my job: I was fresh out of college surrounded by some of the greatest scientists in the nation, all with much more advanced degrees than my own. I often wondered, “What do I really have to offer?” Had it not been for the encouragement of my mentor, I am not sure I would have had the courage to get involved in the CCR-FYI, let alone take on leadership roles or write in this newsletter!

My experiences volunteering in the CCR-FYI Steering Committee and Colloquium Planning Committee have helped show me the importance of community engagement and provided me with ample opportunities to network with other fellows – two very important things that I will carry with me as I move forward in my scientific career.

Since joining these committees, I have had the opportunity to take on multiple leadership and outreach roles, including but not limited to, serving as the postbac representative for the CCR-FYI, helping to welcome new NCI fellows during orientation, assisting with the annual CCR-FYI holiday gift drive, working as the secretary for the CCR-FYI Colloquium Planning committee, and volunteering as a person of contact and judge for the 2021 and 2022 annual CCR-FYI Colloquiums. Though I am still

sometimes hit with those imposter fears, I remind myself that my mentor saw potential in me and was one of the first people to recommend me for a leadership role within the committee. Additionally, CCR-FYI has a majority of postdoctoral fellows compared to postbac fellows. As such, I remind myself that this is a great opportunity to network with and learn from other scientists who are further along in their career.

Outside of official NCI and CCR-affiliated activities, I have also got involved in postbac-specific communities, such as Club PCR and Frederick's vibrant postbac community! For those of you who are not familiar, Club PCR is a non-NIH affiliated community for young scientists that hosts a wide variety of events, including but not limited to: the Postbac Seminar Series, outreach activities, social activities, and more! It was through attending a Club PCR hike at Sugarloaf Mountain that I met other Frederick postbacs for the first time ever, after working at NCI for almost a year. Since then, I have made so many connections, and some really great friends.

There are still many difficulties with meeting people and finding your community as a result of the continued pandemic and state of the world. I highly encourage other fellows to find small ways to engage with their community, whether that be joining the CCR-FYI Steering Committee or Colloquium Planning Committee, by attending a social event hosted by Club PCR, or simply by saying hi to someone new in the hallway. The NIH and NCI are both filled with amazing scientists, and even better people, to build connections with. Having a sense of community is so important, not just for career advancement, but also your mental health. I can definitely speak on behalf of both of those things. If you are interested in joining either of these groups, please see the links below.

CCR-FYI:

<https://www.cancer.gov/grants-training/training/resources-trainees/get-involved/fellows-young-investigators-association>

Club PCR:

<https://www.training.nih.gov/listservs>

## Lessons from a Jigsaw Puzzle

by: Francine Baker

During the past two years, we all had to find ways to deal with the mental and emotional strain caused by the pandemic. Mental health professionals worldwide stressed the importance of self-care – set boundaries with virtual work, take time to unplug, as best as possible maintain a daily routine, and if necessary, seek counseling. But we're scientists! We don't have time to unplug. And setting boundaries for many of us is difficult. We work and work, and work some more until the problem is solved, the experiment is just right, or that manuscript is submitted. Our daily routine? If you are a lab person like me, COVID-19 threw that routine out the window.

It was very difficult for me to transition to virtual work. Instead of doing bench work, I was learning how to use statistical software to analyze data. While grateful to have the opportunity to learn new skills, the mental and emotional strain of having to learn these skills in isolation, because a pandemic made it so, left me feeling frustrated and unfulfilled. The worst part, I felt cheated of the opportunity to have a well-rounded fully engaged training fellowship. Not wanting to give COVID-19 any more control over my life, I decided to take some of that mental health advice and apply self-care to my weekly routine.

Every weekend for the past year, I take time to quiet my mind and reset for the week ahead. I do this with various forms of meditation and a jigsaw puzzle. At first, these puzzles were a fun way for me to practice mindfulness. Then they became a way for me to keep pace with the

season change. Now each puzzle challenges me to think a little harder and often, to change my perspective. It is remarkable the number of lessons I have learned over the past year by assembling jigsaw puzzles. What is even more remarkable is how these lessons have shaped and helped me grow as a scientist.

Here are just a few lessons I learned from a *Rainy Night Walk*:



I was trying to put pieces together in suboptimal light. The puzzle was already difficult to begin with. However, it wasn't until I had perfect lighting that I was able to see clearly where certain pieces fit. In research it's not necessarily lighting that's the issue — a lack of understanding, poor communication from a mentor/PI/collaborator, bad protocol, bad planning, inadequate supplies/equipment, lack of support, and lack of collaboration are all barriers that could prevent a researcher from clearly seeing the big picture or at the very least how they/their part fits into the research puzzle.

## **2. Work with what you have and with what you know, gaps will get filled in.**

Each puzzle comes with a poster of the picture, all pieces that fit, and contact information for missing pieces. Additionally, I know how to put jigsaw puzzles together. With this information, there is no reason for me to worry or fret when I get stuck. Not only do I have a guide, I also have several options to explore. Regardless of what level we are in our career, we too have a guide (protocols) and several opportunities to brainstorm solutions (co-workers, mentors, and customer support to name a few).

## **3. Be flexible - protocols can be modified.**

I'm used to assembling my jigsaw puzzles the same way, no matter how easy or hard they may be. 1-put together the perimeter; 2-choose a section based on the overall image I want to work on; 3-pull out pieces from the section; 4-fill section in working my way towards a corner. Along the way I may find a set of pieces I can assemble someplace else and work on concurrently following the same steps as above. Generally, this works. However, when it doesn't, I am left frustrated questioning "why did I do this to myself? I knew this puzzle was going to be super hard". Just like research, sometimes I ask myself a similar question "what am I doing here? I'm not smart enough for this". The solution to both is the same - when we feel overwhelmed take a step back and consider what can be modified to make things less frustrating and overwhelming. For my puzzles, as with my research, I have learned that by just starting with what I know and what I can do, I can make enough progress to figure out my next step. And while at times this may seem like

a slow and tedious process, as research often is, progress is being made. I'm learning and growing, I'm building patience and stamina along the way (important traits for a researcher), and eventually the bigger picture comes into view accelerating progress.



## History of Women in Science – Nobel Laureates Part 10

by: **Sierra C. Marker and Tania López Silva**

The *Women in Science: Nobel Laureates* series highlights the life, career, and work of incredible women scientists who have made enormous contributions to the fields of Chemistry, Medicine, Physiology, and Physics. In this edition, we highlight Dr. May-Britt Moser, a Norwegian neurophysiologist that received the Nobel prize in Physiology or Medicine in 2014, together with Edvard Moser and John O'Keefe. Her work in collaboration with Edvard Moser led to the discovery of grid cells, a type of neuron responsible for keeping track of spatial location and how we navigate space.

### Dr. May-Britt Moser



May-Britt Moser was born in 1963 in Fosnavåg, a small town on the island of Bergsøya, Norway. She had a modest upbringing, her dad was a carpenter, and her mother took care of the family, the farm, and five kids while

working small jobs. May-Britt saw how hard her parents worked for their family and soon began to associate work with happiness. She grew up surrounded by nature, which fostered her curiosity and love to observe and study animals. Even at a young age, she always wanted to understand the reasons behind animals' behaviors. She often thought about studying medicine or veterinary medicine, inspired by her mother's unfulfilled dream to be a doctor and her dad's love for animals.

At school, May-Britt was always encouraged and motivated by her teachers, making her feel noticed and special. However, she liked to spend time with her friends and didn't aim to have the high grades needed for medical school. After graduating high school, May-Britt attended the University of Oslo for her

undergraduate studies. At that time, she was still unsure what to study and attempted several study areas such as biology, geology, and even dentistry. At Oslo, she met Edvard Moser, a former high school classmate. Edvard and May-Britt became close friends and decided to study psychology together. They were both interested in learning about the brain, particularly understanding the underlying biological mechanisms that control our behaviors.

May-Britt and Edvard attended classes and worked together through the psychology program. In their second semester, they joined the laboratory of Dr. Terje Sagvolden where they studied the behavior of hyperactive rats and learned essential skills in experimental design, the importance of using proper controls, and vast behavioral theory. Still, they were most interested in studying the brain and decided to do their master's thesis on neuroscience. This dream was challenging because the Department of Neurosciences mainly had medical doctors, and the research group they wanted to join had no space for new members. Their big drive to learn about the brain convinced Dr. Per Andersen to give them a chance in his lab. Dr. Andersen asked them to build a water maze for rats, and if successful, they could join his group. May-Britt and Edvard completed the

maze and started their research on long-term potentiation, the process where the connections between neurons get stronger with more stimulation.

Per Andersen's passion for understanding long-term potentiation was a great inspiration for May-Britt. Her time at Andersen's lab was a formative period for May-Britt. She learned about the brain's anatomy and how to make small, controlled lesions in the hippocampus – the part of the brain responsible for learning and memory – to detect the areas where long-term potentiation occurs. During their Masters' research, May-Britt and Edvard demonstrated that only the hippocampus's dorsal part was involved in learning and memory of space. Their work was published in *The Journal of Neuroscience*.

For their doctoral training, both Edvard and May-Britt wanted to continue working for Per Anderson, as they were already married by that time. That meant that May-Britt had to write a grant proposal to get funding for her studies from the Norway Research Council. Despite Dr. Andersen's opposition and belief that her proposed project would fail, she received the funding. Her doctoral studies were focused on determining if the number of connections between neurons expands during learning by using trained rats as her subjects. She completed her Ph.D. with several publications demonstrating that animals in enriched environments had better and faster memories.

May-Britt and Edvard had several research experiences in the UK. During their Ph.D. training, they were invited to work with Richard Morris at the University of Edinburgh. There, they used a different technique to isolate the dorsal and ventral parts of the hippocampus and confirmed observations from their Master's

theses. After defending their doctoral theses, they joined the lab of John O'Keefe at the University College London, with whom they shared the Nobel Prize for the discovery of place cells, neurons that are activated specifically depending on the animal's location. May-Britt describes her time at O'Keefe's lab as one of the most learning-rich periods of her life. However, their stay was cut short because they were offered to start their own lab at the Norwegian University of Science and Technology in Trondheim.

The Moser lab was interested in deciphering the biology of how our brain processes the information of where we are and how we move in space. Thus, their lab became the Centre for the Biology of Memory. While studying how the place cells in the hippocampus get the signal to recognize a person's location, they found a different type of cell in another part of the brain called the entorhinal cortex. These cells, named grid cells, also have spatial activity. They act by firing signals in a well-defined hexagonal pattern. This discovery represented another piece to understanding our brain and memory and opened the opportunity to further study the communication between grid cells and other cell types in the brain. Their results were published in *Nature*.

**"Science is the field where you can make the impossible possible."-  
May-Britt Moser**

After discovering grid cells, the Moser lab started successful collaborations with other neuroscientists and expanded their scientific tools such as multiple-signal recordings in the same animal and optogenetics. For May-Britt, work should not be limited by the lack of experience in new methods because collaboration with other groups and setting up

new techniques in the lab is the way to make progress in science. Likewise, the support from institutions such as the Kavli Institute, the Norwegian University of Science and Technology, and the Norwegian government has been essential for her work.

May-Britt and Edvard had two daughters during their Ph.D. May-Britt explained that having two kids and doing research was not a challenge at all. Her daughters spent a lot of time in the lab and grew up in the academic environment, traveling with them for their research training and conferences. "I just assumed I could do

things, like take my children to scientific meetings and breast-feed them in public or bring them to the lab." Having a family and running a lab has brought May-Britt happiness and helped her do great science.

Currently, May-Britt is still a professor at the Norwegian University of Science and Technology, the founding Director of the Centre for Neural computation, and the co-director of the Kavli Institute for Systems Neuroscience. Together with Edvard Moser, she continues working towards unveiling the mysteries of our brain and memory.

***Photo credit:***

May-Britt Moser, © Nobel Media AB. Photo: A. Mahmoud

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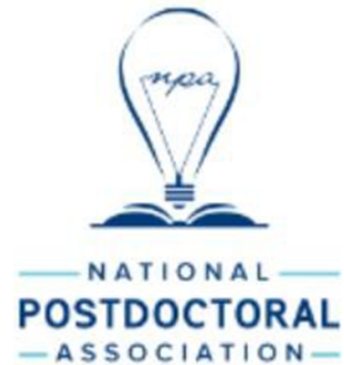
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