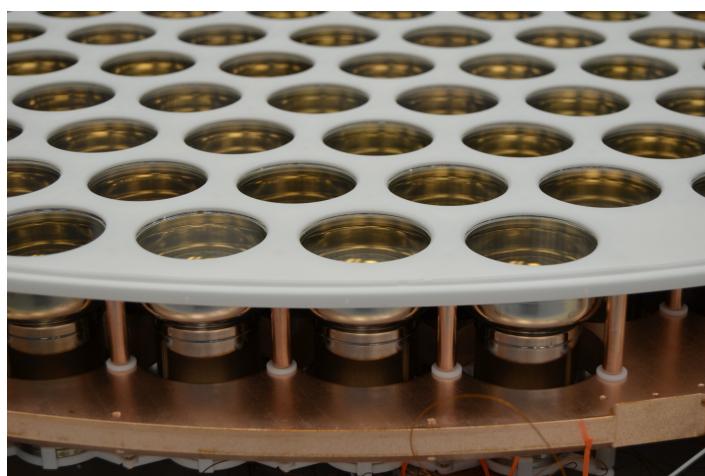


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Behind the Scenes: Life & Family as International Researchers

Swiss scientists Laura and Michael Baudis share their experience on international research, traveling and raising a family.



Photomultipliers tubes used during the Dark Matter Xenon Experiment, Gran Sasso, Italy

Laura Baudis is a professor in Physics at the University of Zurich, and Michael

Baudis is a professor in Bioinformatics at the University of Zurich. They've lived around the world as scientists and have raised a family along the way. We recently interviewed them over Zoom, as their research visit in the Bay Area came to an abrupt end due to the outbreak of the coronavirus. Their personal account of how they've navigated work and family life is an insight into the world of international researchers – with a human perspective.

We spoke with Laura and Michael Baudis while they were in the Bay Area as visiting researchers at UC Berkeley and the Lawrence Berkeley National Laboratory (Berkeley Lab).

INTERNATIONAL RESEARCH

What were you working on during your stay in Berkeley?

LB: At UC Berkeley and at Berkeley Lab I worked in both of my research fields. I collaborated with colleagues on a neutrino physics experiment as I am currently building a new experiment with them in Italy. This experiment investigates neutrinoless double beta decay, and like all of these types of

experiments, it is operated deep underground because we have to shield it from cosmic rays. On the dark matter side, I was working together with direct competitors that are building a competing experiment in the US.

Technically, we are competing, but we also work together because we combine results and it's no secret what we work on. For the next phase, the ultimate dark matter detector DARWIN, there's not enough funding around to have competitors and we will have to work together again. So, it's good to start conversations early.

MB: At Berkeley I was working at Berkeley Lab in their bioinformatics open-source project. The group is involved in developing data mining methods, and are very active in the establishment of annotation standards and knowledge systems. Although they focus more on general life sciences data mining, it intersected very nicely with the work I do at UZH. Some of my collaborators were also part of the Global Alliance for Genomics and Health, where I lead one of the work streams and develop an API for genomic data queries.

Where else have you worked around the world?

LB: We both completed our PhDs in Heidelberg and worked as postdocs at Stanford after that. Our son was about 15 months old when we left for Stanford, and our daughter was born during our postdoc time. Then we worked at the University of Florida as assistant professors for three years and then changed to Rheinisch-Westfälische Technische Hochschule Aachen where we stayed for about one year. We finally moved to Zurich in August of 2007.

MB: The longest time we were not in the same place was about a month, or six weeks. That was when Laura moved to Stanford and I was waiting for my visa in Heidelberg with our son.

How were you able to find places around the world to research together at the same time?

LB: We had to evaluate offers based on whether or not we could be in the same place. To find positions in the same location, it's actually better to work in different fields. It gets more difficult as you move up in your career and this was part of the reason we did not stay very long in Aachen. They have a good physics department, but in Michael's field they were not as strong and did not make him a good offer. Whereas in

Zurich the former president said: “Oh, we don’t see you as a two-body problem, we see you as a two-body opportunity.” This was a welcomed change because wherever you go as a couple, you are more of a problem, not an opportunity. So we moved quickly, because we both had good offers there and also the feeling that we can develop our research and focus on building up our research groups.

MB: And it was pretty clear to us that we did not want one of us to have long dropouts and the other one take a lead in their career. In Heidelberg we had the support of Laura’s parents, and as postdocs our children were at the Stanford daycare and we had the flexibility to stay home with the children, alternating one day a week.

CHALLENGES

What are the challenges and benefits when you raise a family and pursue international research?

LB: Definitely some logistical challenges related to moving that much. And due to my work in the underground lab in Italy I was traveling more than Michael, and there were periods when Michael spent more time

with the children than I did. But the benefits are way stronger. Namely the fact that you have a lot of support in your family. If you work on something that's your passion you can understand your partner. And the children allowed me to decouple from my research, I love spending time with them. We took them everywhere, and as long as they were together with us and felt that the family was happy, they adjusted well.

MB: When our son was 10 years old, he had lived in his 10th apartment plus six weeks in a hotel. We planned longer conference travels or visiting collaborator trips around school holidays and we would hand off during conferences. The children know a lot of university places now! After moving to Zurich our lives got more stable, but our children also learned that they can very easily live in different countries – and they actually have a strong affinity for California.

THE BAY AREA

How has the Bay Area changed from your perspective as both a researcher and parent from your time at Stanford in the early 2000s to now?

LB: An observable change has definitely been that the big laboratories in the Bay Area, Berkeley Lab and SLAC at Stanford, have moved very much into my research direction - into particle astrophysics. That wasn't the case when I was a postdoc at Stanford.

MB: From my perspective it's obviously a big change in the field of biomedical data, which has grown to be much more prominent in the Bay Area. But there have been changes to life in the Bay Area as an external observer. Lots of money pouring into the San Francisco skyline, the old brutalist architecture of the Embarcadero center being dwarfed by new high-rises.

LB: And you have all these big laboratories here in the Bay Area, with breakthroughs at SLAC and Berkeley Lab, and you wonder why there hasn't been a spillover of wealth for the general population. It's a pity, because the region is such a concentration of universities and you would have hoped for a more equal distribution of wealth among the entire society.

MB: That's a very European view obviously. But that's what we also like about Europe.

WORK-LIFE BALANCE

What's your advice for young researchers that are thinking about their future careers and also starting a family?

LB: You have to do what you are passionate about, and not listen to what other people say. In my group at Berkeley Lab, there was only one female master student and she asked me for advice because she was getting many negative comments. I told her that you need self-confidence and role models. I myself didn't have big role models, but I had my parents. They had three children and were high school teachers, so it was always normal for me to think that you can have a career and a family. But you have to compromise and think about your partner and your family. For example, Michael could have gone back to work at a hospital in Heidelberg after our time at Stanford, but instead we both accepted our offers in Florida.

MB: You have to set your sight on long term goals and in which way you want to develop both as a person and as a family. One needs to be flexible, and at

the same time live up to your own high standards. I was on track for clinical medicine at the university hospital in Heidelberg, but had always been intrigued by research. During my postdoc time I switched gears, taking into account the longer view and I built my own field in bioinformatics and data.

You study such different topics from dark matter in the universe to the data behind cancer genomics. What do you discuss at the dinner table at home?

LB: Sometimes we discuss politics, but we also discuss what we recently read. Not so much regarding our research – at least not at the dinner table. We both grew up with literature, and both like books and nature, so we do have a lot of things in common.

MB: That's a good thing, because our research is in very different areas. And we've been side by side this whole way. We've been together since before we started to study and have experienced a parallel development. It's not as if two different areas collided and we had to sort things out.

Laura Baudis and Michael Baudis met in high



school and have since spent their lives together, researching and living abroad with their two children. Laura's research is in particle astrophysics. She builds large liquid Xenon detectors to search for particle dark matter, and also investigates the fundamental properties of neutrinos. Michael's research is in bioinformatics, where he looks at mutations in cancer genomes. He collects data from different sources and screens experiments worldwide to discover patterns in tens of thousands of different cancer types. After spending multiple years in the United States, they settled in Zurich in 2007 and are now both professors at the University of Zurich.

Laura was a visiting Miller professor at UC Berkeley in the spring term of 2020 and you can find out more about Laura's research by visiting her page at the University of Zurich. You can learn about Michael's research by visiting his page at the University of Zurich, and find out more about his work at the Global Alliance for Genomics and Health here.

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N E X T

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