

Informed consent for: “The ethos and effects of data-sharing rules: Examining the history of the ‘Bermuda principles’ and their effects on 21st century science”

University of Adelaide

Duke University

Researchers at the University of Adelaide, Australia, and the IGSP Center for Genome Ethics, Law & Policy, Duke University, are engaged in research on the **Bermuda Principles** for sharing DNA sequence data from high-volume sequencing centers. You have been selected for an interview because we believe that the recollections you may have of your experiences with the International Strategy Meetings for Human Genome Sequencing (1996-1998) will be interesting and helpful for our project.

We expect that interviews will last from 30 minutes to much longer, but you may stop your interview at any time. Your participation is strictly voluntary, and you do not have to answer every question asked.

Your interview is being recorded and we may take written notes during the interview. After your interview, we may prepare a typed transcript of the interview. If we prepare a transcript, you will have an opportunity to review it and to make deletions and corrections.

Unless you indicate otherwise, the *information* that you provide in this interview will be “on the record”—that is, it can be attributed to you in the various articles and chapters that we plan to write, and thus could become public through these channels. If, however, at some point in the interview you want to provide us with information that might be useful for us to know, but which you do not want to have attributed to you, you should tell us that you wish to go “off the record” and we will stop the recording. We will, however, take notes for our own use. When you are ready to go back “on the record,” we will resume recording. Anything you say while “off the record” will not be on the audio recording and therefore will not appear in the transcript.

All *materials* from your interview (audio recording; transcript; interviewer's notes) will be available only to members of the research team affiliated with this project, unless you consent to their wider use, as described in the paragraph below. The digital materials will be maintained in a secure, HIPPA-compliant drive at Duke University. The paper materials will be stored in a locked cabinet.

In addition to the scholarly articles and chapters that we plan to write, we also hope to create a resource for other scholars and members of the public. We plan to post some of our research data to online digital archives. While we will use your “on the record” comments to inform and write our articles, we will not post your interview transcript or audio recording online unless you give us permission to do so, in a separate agreement. At the time we send your transcript to you for review, we will also provide a consent form asking your permission to post your interview transcript and/or audio recording online. The form will provide you with different options for how, when, and with whom the materials may be shared. You will, of course, also have the option not to share the materials beyond the Duke and Adelaide researchers.

One risk of this study is that you may voluntarily disclose identifiable information that later could be requested for legal proceedings, or otherwise be used against you. Please take this into consideration when you are speaking. There may be other risks associated with your “on the record” views being made publicly available, such as having your views mischaracterized or misunderstood.

The main benefit of participating in this study is ensuring that your side of the story is properly portrayed in this history of the Bermuda Principles, which have become a model for open and collaborative research in genomics and other fields.

To help us protect the privacy of those parts of your interview that are not public, we have obtained a Certificate of Confidentiality from the U.S. National Institutes of Health. With this Certificate, we investigators cannot be forced to disclose information that may identify you, even by a court subpoena, in any U.S. federal, state, or local civil, criminal, administrative, legislative, or other proceedings. We researchers can use the Certificate to resist any demands for information that would identify you.

The Certificate cannot be used, however, to resist a demand for information from personnel of the United States Government that is used for auditing or evaluation of federally funded projects or for information that must be disclosed in order to meet the requirements of the federal Food and Drug Administration (FDA).

A Certificate of Confidentiality does not prevent you or a member of your family from voluntarily releasing information about yourself or your involvement in this research. If an insurer, employer, or other person or institution obtains your written consent to receive research information, the researchers may not use the Certificate to withhold that information.

Signature 

Printed Name PROF. HANS LEHRACH

Date APRIL 10 2012

If you have read this form in its entirety and agree to the interview and its terms, please sign and date above.

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*If you have any questions about your rights as a research subject, you may contact the **Duke University Institutional Review Board** at 919-684-3030 or ors-info@duke.edu.*

stark <stark@molgen.mpg.de>

July 9, 2013 8:27 AM

To: Kathryn Maxson <kat.maxson@duke.edu>

Cc: Hans Lehrach <Lehrach@molgen.mpg.de>

Re: Bermuda Principles Interview Transcript

Dear Kathryn,

Hans wants an embargo of 5 years for the transcript before becoming available in an archive.

Thank you very much.

Bets regards

Ingrid

On 08.07.2013 17:57, Kathryn Maxson wrote:

Dear Ingrid,

This is wonderful, thank you so much.

Would you mind sending me over email any restrictions Hans would like to place on this, in terms of public Internet archiving?

Options include: No restrictions at all, any number of years' embargo before becoming available in an archive, never post in a public archive, etc.

(The archive will be housed here, in case you're interested: <http://dukespace.lib.duke.edu/dspace/handle/10161/7407>)

All best,

Kathryn

On Jul 8, 2013, at 9:51 AM, stark <stark@molgen.mpg.de> wrote:

Dear Kathryn,

Thank you for reminding us on the transcript of Hans Lehrachs interview and please find attached the corrected version of him, which should be used. Please make sure that this corrected text will be used and let us know if you would need any further information.

Thank you very much and please excuse the delay in this matter.

Best regards

Ingrid

Interviewee: Hans Lehrach

Date, location, method: 10 April 2012, Durham, NC, by phone

Interviewer: Kathryn Maxson

KM: So just for the record we have [HLehrach] here from Germany and we've turned on the recording device. And I have received your informed consent. Thank you very much. And just to review for you what we're going to do, this interview is recorded and we're going to send the recording to a transcriptionist who will create a transcript of this interview. The recording will never be seen or heard by anyone else but me. It's going to go on a secure server after that. When we get the transcript back I'm going to send it to you and give you a chance to make any edits, deletions, corrections to that transcript. And then along with the transcript there will also be a check sheet that will tell us what we're allowed to do with that transcript, the one that you've edited, outside of our research group. So that's our process. And we're trying to write several papers on history and sociology of science here. You're about the 30th interview we've done. We're trying to talk to as many of the people who were at the Bermuda meetings as possible. Did you have any questions for me?

HLehrach: No. I was only once at the Bermuda meetings. And my wife, who is unfortunately on the road at the moment, was I think a few times more, twice more. So I'm not going to be your greatest source of information. But anyway, Tim Hubbard, at the Sanger Centre would, for example, probably be a good guy to talk to in the whole process.

KM: Yes, we have his name. Thank you for that. So you were at the 1996 Bermuda meeting, right?

HLehrach: That could very well be.

KM: We have the participants' list for all three of them and we have you down for the first one in 1996. And actually we're extremely interested in that first meeting. In fact, most interested in that meeting. And in particular I'm interested in the policy background that you were coming from in Germany and any opposition you encountered within Germany in terms of complying with the Bermuda rules. And were you the only scientist from Germany at that meeting? Or do you remember if your wife was at that first one?

HLehrach: She was not. But I would expect that maybe André Rosenthal might have been there. There were three groups in Germany involved in the sequencing. André Rosenthal, Helmut Bloecker and my group. I just don't remember if other guys were there, but I would expect that at least André Rosenthal would have been.

KM: Actually, you're right, André was there, you're right. So it was you and André Rosenthal at this first meeting. And I was wondering if you could just start out with a little bit of a description of your background, what brought you to genomics, and what you were doing leading up to the 1996 Bermuda meeting that you believe led you to be invited.

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HLehrach: I was interested in genomics from the beginning. As a postdoc in Harvard I was one of the first people cloning a cDNA clone after the end of the Asilomar Moratorium. While I was in Harvard, I was working very closely with Wally Gilbert's group and was therefore very aware of the new developments in sequencing technology. So when I went to the EMBL I tried to convince the institute to sequence the *E. coli* genome as the first 'genome centre' world wide, since the institute had been founded as a 'Molecular Biological CERN,' focusing on areas, which could not be addressed by individual European nations. Among other things I gave courses to members of the quite large instrumentation division, to get them interested in this topic. I was also involved in the first discussions on setting up the DNA sequence database, which turned into the EBI in the end. The first head of it was Greg Hamm, who had been working with me on writing sequence analysis programs. Both potential projects were then discussed at a first meeting in Schönau in 1980. Charles Weissmann then proposed to immediately sequence human chromosome 21 instead of the *E. coli* genome, which was interesting in retrospect, since my group was heavily involved in sequencing chromosome 21 as part of the human genome project. As everybody knows, the role of EMBL in setting up the sequence database was accepted. Unfortunately the proposal to move the EMBL in the direction of a genome center, which could have accelerated worldwide genome research quite a bit, was not. My group was on of the main players in the development of positional cloning in mammalian systems, man and mouse, in the early '90s. So we were very much aware of the problems of walking long distances on human chromosomes and the huge benefits the sequence of the human genome would have. We had one of the first of the genome workshops probably in '86 at the EMBL, or at least organized at the EMBL. I think it was also taking place at the EMBL. I was also involved early on in discussions with Wally Gilbert, George Church, Charles Cantor and others to set up a company to sequence the human genome by the multiplex sequencing approach developed by George Church.

KM: And had you left Harvard for Europe by then or were you still at Harvard?

HLehrach: I left Harvard for Europe in '78, I think. I was at the EMBL from '78 to '87. So as I said, we had most people interested in genome analysis in our workshop in '86. But this was way ahead of its time in Germany. We had very interesting discussions on the different technologies. I kept trying to get the EMBL involved in genomics, but did not have much luck with Lennart Phillipson, the director. Though the Scientific Advisory Board had given me a scientific review, and was very interested in allowing me to continue this work at the EMBL, I could not continue there. As far as I understand, this also killed the chances of the EMBL to get a significant amount of money for genome work from the EU. I still consider this a bad mistake on the part of the institute, since the genome project was exactly what the European Nations had in mind, when they set up this institute, high tech, instrumentation driven biology at a scale which could not be carried out

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on the national level, the famous ‘molecular-biological CERN,’ but unfortunately this was killed by the then-director (and, presumably, internal politics).

KM: Right.

HLehrach: When I came to ICS I started a department of genome analysis. We'd been the first to develop high-density arrays, long before Affymetrix managed to get a patent on the concept. It was a big thing. Quite amazing. We made chromosome specific cosmid libraries from flow sorted chromosomes libraries, as well as many other libraries, which we tried to develop into ‘reference’ libraries, where we could accumulate many different types of information on every clone, based on distributing high density filters to laboratories all over the world. The different groups then sent back information on the results they got, which we entered into the so called primary database, so everybody could see all the information accumulated on every clone. In this work we developed a lot of the infrastructure that is taken for granted today. The molding tool for the first 384 well microtiter plates was actually paid for from my budget. For some time we then got some money back into our department budget for every plate sold by the company, which made them. We also developed much of the automation, which was used all over the world to pick, re-array and spot clones, which was quite funny, since we were not an engineering group, but developed better machines than many of the much larger, dedicated groups elsewhere. In total, the company Genetix, which had originally produced the high-density microtiter plates, and then went on to produce the robots we had designed, ultimately sold hundreds of machines to genome centers and companies all over the world. At ICRF we worked mostly on techniques to map the genome, and to analyse the function of the genes, but we did also work on a technique to sequence by hybridization, an idea I had had already in 1983, which then was independently developed by Rade Drmanec, who also came as a postdoc to the lab, since this technique could, in principle have been able to sequence the whole human genome with a few graduate students, which was the most we could think of was going to be available for this job.

KM: Right.

HLehrach: I just couldn't imagine we could ever get so much money together to do it as we finally had. So when I came back to Germany, EMBL discussed with [Inaudible] comes to EMBL was very interested in genomics and so they quickly set up a human genome project in Germany, more or less against the resistance of a large part of the leading scientists in Germany. People, when finally this project got a fair number of scientists, [Inaudible] and a few others...I don't remember his name now...led us to the minister saying that this was just a stupid project and Germany should stay out of it and just do the things we were particularly good at. This was just brainless sequencing, more or less. And if it was politically impossible to stay out of it, it should pay some money to some American genome center, just like [Inaudible - laughter].

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KM: Right. [Laughter].

HLehrach: When I moved to Germany, I tried quite hard to get Genome Research going. There was quite a bit of resistance by many in the scientific community, because they were afraid, this would reduce the amount of money flowing into classical science. Without the strong support of these new developments by the BMBF, there would not have been a Genome Project in Germany, years after the U.S. and other countries. A number of leading scientists supposedly wrote letters to the minister, trying to kill the project, arguing, that this was just stupid sequencing, which should be left to the U.S. This almost killed this enormously important project in Germany out of the narrow self-interest of a few scientists. Some decisions in science are obviously too important to leave to the internal politics within the scientific community.

When the genome funding in Germany started, we were able to do a lot of work on functional genomics, and were able to increase the reference library system of distributing high density filter grids to labs outside, and collecting and redistributing the information, a job which was then taken over by the RZPD as a common infrastructure for the genome project.

In the sequencing of the human genome, we focused in particular on chromosome 21. This chromosome was mostly sequenced collaboratively between two Japanese and three German groups.

KM: Was this Yoshi Sakaki?

HLehrach: Yeah, Yoshi Sakaki was the leader of the consortium. We had been working in the department in the group of Marie-Laure Yaspo on chromosome 21 and Down syndrome for a long time. So we had a lot of expertise. Chromosome 21 got published as the second finished chromosome of the human genome project, shortly after chromosome 22, which got sequenced at the Sanger Center. We also had been working on chromosome X and chromosome 3, as well as a few other chromosomes. Our institute effectively was the closest Germany ever got to have a genome center.

KM: So this is at Max Planck?

HLehrach: The center was at the Max Planck Institute.

KM: Yeah, and you were getting money from BMBF at this ...

HLehrach: All our money came from the BMBF. We also used to get quite a bit of money in the early stages from the EU. In fact, one of my things I was most proud of is when I just came to the ICRF and the EU finally, after delays, started funding genome research, my department got roughly 8% of the total money they gave

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out. The U.K. got 14 percent of the EU genome grants and only effectively paid in 10 percent. Without my group, they would have gotten much less than they had paid into the program.

KM: Right.

HLehrach: So at that point my lab was more or less equivalent to a medium sized European nation in terms of genome funding from the EU.

KM: Right, oh, my goodness.

HLehrach: We were working on the genome project for a long time. In fact that brought me to Bermuda.

KM: So, all right, you are at Max Planck and you're getting money from BMBF up until 1996 to do mapping and that sort of thing.

HLehrach: For a long time, we concentrated on functional genomics: we could, for example, find expression patterns by hybridizing labeled cDNA to clone filters, or express proteins in expression constructs in colonies, and screen with antibodies to identify clones producing specific proteins, or the targets for autoantibodies. We also developed large-scale automated screens for protein-protein interactions. Larger scale sequencing we could only start, once the human genome project had started and Germany put money into it.

KM: And when did that happen? In 1997, did you get money for sequencing?

HLehrach: I think we got money for sequencing from the beginning. I don't remember when the actual start was. I thought it was maybe even 1990. I would have to look. I don't remember when, but I can ask BMBF. By the way, just as an aside what we are doing now, is a so-called flagship project. What we're proposing is to construct models of every individual in the healthcare system, based on a detailed molecular analysis. The doctor can then first try the therapy on the virtual patient. If the virtual patient dies, he can reconsider his therapies. So, a 10 year long project with one billion euro funding just in Europe and very big in scope.

KM: Oh, wow. Well I wish...when is the grant due?

HLehrach: We have one deadline of April 5th, and the real grant deadline for the grant, which really counts most, is middle of October. And we are one of the six projects, two of which will be selected for funding.

KM: Right.

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HLehrach: We have a pretty reasonable chance to get funded, which then would end up with billions of genomes.

KM: Oh, my goodness. Well good luck. So you mentioned that you couldn't start up the hardcore sequencing until there was an official human genome project in Germany. Do you remember when that was?

HLehrach: At the point I don't remember. I thought it was more close to ninety or so. I could ...my wife has just returned...I could maybe ask her.

KM: Sure.

HLehrach: If she knows.

KM: Please ask her.

HLehrach: When did you get funding from...for sequencing?

Woman: Which?

HLehrach: Genome funding, BMBF.

Woman: [Inaudible].

HLehrach: Ninety-six, okay.

KM: Ninety-six, okay.

HLehrach: We can check, but roughly '96.

KM: Roughly '96. Well if you wouldn't mind, if you could check that or talk to BMBF.

HLehrach: I can check that.

Woman: [Inaudible].

HLehrach: Yeah, we published chromosome 21 in 2000.

KM: Right.

HLehrach: But we can find out.

KM: So would there have been an official announcement from BMBF about ...

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HLehrach: Yeah, I'm sure. I'm sure there was...there must have been the official announcement.

KM: Yeah, is there any way that we might be able to get a copy of that announcement? Is that a public document?

HLehrach: I'm sure, I would think so. I can ask, okay?

KM: Yeah.

HLehrach: You want to know...at the moment he's on vacation. But I can ask him when he's back.

KM: Yes, that would be absolutely wonderful and extremely helpful. Thank you. So I'm asking because do you remember in the 1996 Bermuda meeting when at the very last session John Sulston wrote up on the white board what became the Bermuda Principles for sharing data in the human genome project? Do you remember that session? And what was that session like?

HLehrach: Yeah, a bit faintly, but I remember the discussions we had afterwards in Germany because the German funding agencies were not enthusiastic about not patenting. The German funding for genome research was based on the argument that the German industry would benefit. So we had a so-called group of companies supporting the project, In fact, not the research, just patenting costs in return for some patent rights. So the German project had some problems with the Bermuda rules.

KM: So was this a formal agreement where they wouldn't...the companies wouldn't pay for the research, but they'd help pay for the patenting costs?

HLehrach: Yes. There was a form...I'm sure there was a formal agreement, there was an official committee set up so...I can get some more information from a colleague who at that point was involved on the side of the German Industry Committee, because he was representative for one of those companies.

KM: I would be extremely interested in that because I'm interested in the policies. If you could find out more information on that formal agreement, I can send you an email afterward reminding you of all this too.

HLehrach: Okay, because I can't ...

KM: Yeah, yeah. So was your money at Max Planck before Bermuda subject to this agreement also since it was coming from BMBF?

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HLehrach: Yes, in general, yes. But BMBF then decided to follow the Bermuda rules after some discussion. So I think the sequencing was probably for the whole time following the Bermuda rules.

KM: Yeah. And how did that process work? So you and André were both there in 1996, André Rosenthal, and you came back to Germany, and how did you get BMBF to agree to the Bermuda Principles?

HLehrach: Basically, I was...there was a committee of people, scientists, running the German genome project, so-called speakers of the Genome Project they had to be [Inaudible] consortium. And I was one of those speakers so I was involved in running the whole thing and discussing with BMBF and with [Inaudible] how to handle this disagreement between the Bermuda Rules and the German rules. I was involved in all those discussions.

KM: And who was the head of that committee?

HLehrach: I think I was.

KM: Oh, you were the head of it, okay.

HLehrach: I have to remember how we did it, but there was ... it was ... oh, God, I'm having a very hard time remembering who else was on there. It changed over time. I can dig out who was the head of this committee from when to when.

KM: Sure, yes, that would be extremely helpful. And did this committee exist before the Bermuda meeting and then the Bermuda Rules?

HLehrach: Yeah.

KM: Okay. And then the Bermuda Rules became an item of importance for this committee.

HLehrach: I think at first the genome project and this one, as far as I remember, but I'd better check. It was some time ago.

KM: Sure. And did you guys have formal committee meetings?

HLehrach: Yes.

KM: And how did your communications with BMBF work? Was it through memos or conversations?

HLehrach: I think there were...we had meetings together with...there was always, I think it was probably always somebody present. Again, I can talk to the guy who was sort

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of the secretary of that committee and refresh my memory on the details when things happened, or with the BMBF.

KM: Yes, that would be extremely helpful. And just one more thing on that, do you remember if there was any sort of formal statement from BMBF indicating that the sequencing money should not be subject to this agreement with the pharmaceutical companies and that the data should be released?

HLehrach: Yeah, I'm sure there was. There were multiple statements and that was the official change in policy. I don't remember exactly which forms they put out...

KM: Yes, of course. And if there's any...if those are public documents, and there's anywhere that I could go to find those, or anyone that I could contact, or if you'd be able to find them...

HLehrach: Okay, two people...there are three people you might want to talk to or contact. That is Frank Laplace at BMBF. He was the person who actually organized the whole German genome project. He would be able to tell you how difficult it was to get it through and when they put out which press release, because he was the primary person responsible. Then there was Rolf Zettl, who is currently an administrator in the Humboldt Society, who was at that point the secretary of the speaker committee. And there is Nicholas Zacherl, who used to be on the industry committee. So all of those people would be able to provide you with a lot more information...

KM: Okay.

HLehrach: ... because they know it from the other side and that was...we were just too wrapped up in the science to worry too much about announcements.

KM: Right. And would you mind spelling the last names of the second two folks that you mentioned?

HLehrach: Yeah, maybe I could send you an email. *[KM: See above.]*

KM: That would be great. Thank you so much. And so after BMBF decides to have this formal policy shift, did this apply then later to anything aside from human genome sequence? Or was this a policy just for human genome sequencing?

HLehrach: I think that was a policy just for the human genome project and for sequencing. We are involved in the thousand genomes project and that's running by the same rules. Any German participation in the international projects, had to follow these rules.

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KM: And so the motivation for BMBF to make this formal policy shift was so that Germany could be part of this international collaborative project, which was extremely important, was that the motivation?

HLehrach: Sure. Oh, sure, basically BMBF was very helpful, very interested in supporting this type of research. And in the situation within the government you have competing directions, people have different ideas what to spend money on. The support of the industry was therefore quite important to help the concept of genome research, to really be accepted and funded. The BMBF was then suddenly faced with the problem, that the approach they had used to increase support for genome research in Germany now suddenly ran into these international rules. I do not think they minded that much themselves. Do you see what I am trying to say?

KM: Yes, of course.

HLehrach: It's just very difficult to get the support you need to get reasonable large amounts of money put into one particular direction of science.

KM: Yes, yes.

HLehrach: The problem with the genome project is that scientists support scientific projects mostly if the majority of the scientists profit. Any project in which most scientists will not profit, will automatically generate a certain amount of resistance...

KM: Right, and ...

HLehrach: So to some extent if you do, or want to submit a project in which thousands of scientists would each get a graduate student, nobody will complain. If you propose to use the same money to sequence the human genome, which will probably be a lot more useful, you'll have a huge outcry by the scientific community. And I suppose the pharma companies will not be supportive either. So you try to build support any way you can.

KM: I understand. So when...well I guess you did not go back to Bermuda in 1997.

HLehrach: No, I just had too much to do.

KM: Yeah. So did your wife tell you what the process was? Did Germany then go back in 1997 and by that point you were able to agree to the Bermuda Principles and say that you had been able to have an agreement with BMBF?

HLehrach: Yeah, we had that. I think we had that long before the next Bermuda meeting. And so we basically just communicated by email or telephone in the various steering committees. It was not a formal announcement at the Bermuda meeting, but it was pretty clear before that, I would expect.

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KM: And the formal announcement would have come between the 1996 and 1997 Bermuda meetings.

HLehrach: Yeah, that's what I would believe.

KM: Okay, okay. And when you were going to Bermuda what did you expect that the discussion would be about?

HLehrach: How to organize the project, how to divide up the sequencing. There had been, for example, at some point the idea by Jim Watson for example, to distribute the chromosomes to individual nations. I think basically we just had to sort out how to get going, how to distribute things, where to collect the data, which forms. It was sort of a working meeting to organize the process.

KM: And did you expect there to be this discussion of data release principles?

HLehrach: Yeah, it was not completely unexpected that that would come up. I didn't mind. I was happy with any system that didn't cause us problems with the BMBF or with the other partners in the project. The BMBF was very helpful. I thought we would have real problems changing the rules.

KM: Right, right. This is extremely interesting. So when BMBF gave money to sequencing, they were giving it to the same three groups that were doing the functional and structural genomics? Was it you and André...

HLehrach: No, no, there were a number of groups involved in different aspects of the human genome project. There was for example, a reference library system in my department, we did proteomics, we did all sorts of things, but there were other groups. And Annemarie Poustka was a very strong group at the DKFZ in Heidelberg, who originally had started as a Technical Assistant in my lab at the EMBL. So we were working very closely, but there were other groups, for example. There was a major mouse genetics activity. There were lots of human genetic projects. It was a wide mix of different projects. I'm sure you could get Frank Laplace for example to give you much more information on the grants funded at various times of the DHGP and afterwards.

KM: Right, right.

HLehrach: [Inaudible] our projects ...

KM: Yeah, I think I may email him and ask him. And so who was it then who was getting large scale sequencing grants?

HLehrach: The largest amount of sequencing money itself went to Jena to André Rosenthal. We were probably second and Helmut Bloecker in Braunschweig was third. Our

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sequencing capacity increased over time, while the one in Jena decreased, partly since André Rosenthal moved out of Jena to run a company which was set up by Schering. Jena continued to sequence but on a smaller scale than before, so we were, at some point the largest sequencing group in Germany.

KM: Right, right. And in this period, from 1996 to 1997, if I'm not mistaken, André Rosenthal was pretty vocal on the radio and whatnot trying to make sure that BMBF changed their data release policies for the purposes of the human genome project. Do you remember that?

HLehrach: Yeah, sure, he was pretty vocal. I was always trying to get them to change it, but not over the radio.

KM: Right. [Laughter].

HLehrach: That's not necessarily the easiest way to communicate.

KM: And do you think that his efforts had any effect or do you think that it was largely the committee that you mentioned that had meetings with folks from BMBF?

HLehrach: I think it was mostly the committee because there was no inherent resistance. So it was really trying to find a way that was acceptable.

KM: Right.

HLehrach: At least that was my impression. That was the argument used to establish a funding scheme. Now it's a little bit difficult to just drop one of the cornerstones. [Laughter.]

KM: Right. Wow, this is extremely interesting. So well just to wrap up here, because I was interested in speaking with you mostly about all of these topics that we've already discussed since you were only at the first meeting. I can't even tell you how helpful it's been. So if you wouldn't mind, I will send you an email about the few things that we've discussed following up on. And if you could also give me the contact information, emails for Frank Laplace and BMBF and the other two folks that you ...

HLehrach: I will send you the email, okay?

KM: Yes.

HLehrach: If you have any questions, just get back in touch with me. There's a lot more detail in some of those things that we did not have time to go into [laughter].

Interviewee: Hans Lehrach

Date, location, method: 10 April 2012, Durham, NC, by phone

Interviewer: Kathryn Maxson

KM: Right. I really appreciate this. And what I'm doing, just so you know, is I am writing a paper, which is actually going to be my graduate school admissions essay, because I'm on a post-baccalaureate fellowship here at Duke, doing research on science policy and history of science. I am writing the more policy-oriented side of this history, which is why I was asking so many questions specific to what happened with BMBF. I'm going to be drafting that over the next few months and then trying to get it ready, not to publish, but to at least use as an admissions paper by the end of the summer.

Also, as I said, I'm going to make a transcript of this interview and no one will ever hear the recording. And in that transcript you can remove or edit or correct anything you like. So if there's something you don't think BMBF would be comfortable with, you can remove it.

HLehrach: Okay.

KM: Wonderful, thank you so much. And good luck on your grant.

HLehrach: Thank you. So there's an institute for history of science, Max Planck Institute, 50 meters of where we are. So that's something you might visit at some point.

KM: Yeah, it's extremely famous. I've never been to Germany and I would love to come at some point.

HLehrach: Thank you.

KM: Well wonderful, thank you so much, Professor. And you'll be hearing from me via email.

HLehrach: Okay, very good.

KM: Bye, have a good evening.

HLehrach: Good-bye.

KM: Bye.

END OF RECORDING