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Mid-career study (Mittelbaustudie) 2015–2016

– an analysis of the situation of mid-career scientists at the ETH Department of Environmental Systems Science (D-USYS)

Executive Summary

Dagmar Schröter & Ralph Hansmann

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Authors	Dagmar Schröter (External Lecturer, Forest Ecology & TdLab) Ralph Hansmann (Lecturer and Associate Research Fellow, TdLab)
Layout	Sandro Bösch
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ETH Zürich
USYS TdLab
CHN K 78
CH-8092 Zürich
info-tdlab@ethz.ch

Executive Summary

- The **focus of our study** is the contribution, working situation and career development of the (advanced) Mittelbau, which we define as academic employees of D-USYS that have a PhD or doctorate, but do not hold a “full professorship” (see Box 1).
- **Part 1** of this study analyses the situation of current D-USYS Mittelbau members, using an online survey and targeted personal interviews. **Part 2** studies the career path and hindsight reflections of former D-USYS Mittelbau members, using an online survey.
- Among current and former Mittelbau members, there is a lot of **satisfaction** with the individual working conditions as such (resources, quality of teaching and research, inspiration through research community) and a lot of **dissatisfaction**, as is apparent in the fields of inquiry summarized henceforth.
- The **average length of contract duration** for a current temporary Mittelbau member is 1.2 years, while for former D-USYS Mittelbau members it was significantly longer (2.3. years). The majority of current Mittelbau members experience their temporary employment situation as a particular hindrance in their life outside D-USYS (57.4%).
- The **average number of contracts signed** by current Mittelbau members is 4.3, which is significantly more than former members have signed (i.e. on average 2.8 temporary contracts).

Box 1 – Who is the “Mittelbau”?

In this study, we defined Mittelbau as academic employees of D-USYS that have a PhD or doctorate, but do not hold a “full professorship”. Thus, assistant professors and Titularprofessors are included into the “Mittelbau”, while full professors (ordentliche und ausserordentliche Professoren) are not. External lecturers (Privatdozenten and adjunct lecturers), as well as those Titularprofessors who provide lectures at D-USYS but do not have a working contract at D-USYS were also excluded from our target group, since their professional lives tend to be centred predominantly outside D-USYS.

In other contexts, the term Mittelbau can be defined differently. There are differences in definition between Switzerland, Germany and Austria and between different universities and universities of applied sciences. For example, the Mittelbau can also be seen as all scientific staff of higher education institutions without the ordinary and extraordinary professors at the top, and without the undergraduate student assistants at the lower end of the hierarchy (Young et al. 2009). At ETH Zurich these would include the employment categories II to IX as defined by the Schweizerisches Hochschul Informations System (SHIS) developed by the Federal Statistical Office (BFS 2011, p. 44). These are positions ranging from scientific assistance, doctorate student and post-docs to senior scientists such as Oberassistenten, Titularprofessors and assistant professors. It seemed practical to us to choose a narrower range for this particular study and focus on the more advanced Mittelbau members with PhD.

- Just under 24% of current Mittelbau members are employed on **open-ended contracts**, the others are employed on **temporary contracts**. The majority of *former* Mittelbau members (70%) work on open-ended contracts in their current position.
- Mittelbau members seem to transition gradually into positions of greater leadership in which their **responsibilities and rights remain ill defined**. This is indicated by the finding that a surprising number of current Mittelbau members, nearly 40%, were not sure whether they **led their own working group** or not, answering “it’s hard to say, sort of” when posed this question (for former Mittelbau this number was 30.7%; see Figure 1).
- The majority of current Mittelbau members were **responsible for the oversight, coaching and supervision** of one or more researchers.
- The current Mittelbau members’ work of **supervising BSc- and MSc-students** is often not officially recognized: When supervising BSc- and MSc-students, only 50.0% of Mittelbau members were “always officially listed”, leaving a substantial number of supervisors without official credit.
- The current Mittelbau members’ work of **supervising PhD-students** is often not officially recognized: When supervising PhD-students, only 42.1% of Mittelbau members were “always officially listed”, leaving 28.1% that were “usually”, 3.5% that were “sometimes”, and 26.3% that were “usually not” or “never” officially listed.
- Around a fifth of current Mittelbau members feel that their obligations to D-USYS or their superior does not (or “rather not”) leave enough **time for their own research**. Among former Mittelbau members only 12.0% felt similarly.
- **Authorship** of current Mittelbau members seemed adequately reflected to them in proposals 54.5% of the time, and in research papers 77.0% of the time. Approximately one third of the participants who write research papers automatically include their professor’s name on the author list.



“In five years, I see myself with the same job title, about the same salary, and significantly more responsibilities.”

Figure 1

After doing this study, our guess is that quite a few Mittelbau-members can relate to the lady in this job-interview. Cartoon from *The New Yorker* in 2016.

- **Employment categories:** Just under 30% of current Mittelbau respondents were officially categorized as postdocs, 23.4% as Oberassistenten and 6.5 % as senior scientists, 19.5% in higher scientific employee categories. Only about 5% were in Scientific Employee/ Collaborator or Scientific Assistant II positions. Further 6.5% belonged to other categories and ca. 10% did not know which category they belonged to.
- Of the former Mittelbau members, 42.1% were postdocs at D-USYS, 39.5% were Oberassistenten, and 6.6% were senior scientists – however, these numbers are probably not strictly comparable to the current Mittelbau, as former members may have given labels that are incongruent with their official labeling during their time at D-USYS.
- **Alternative job titles:** Many current Mittelbau members suggested alternative job titles to their official functional categorization. These suggestions were in general less hierarchical and more function-oriented. The terms “lecturer” and “professor” (with additions like “assistant”, “associate”, “adjunct” etc.) were suggested particularly frequently. More adequate, modern terms and official translations would help prevent misunderstandings in international career development. Furthermore, our impression from the responses and from our personal interviews is that it is a constant energy drain to feel misrepresented in one’s job-title.
- Around 9% of current and 11% of former Mittelbau members felt **disadvantaged due to gender, ethnicity, race or faith**. The main concerns seemed gender discrimination and discrimination against an ethnicity.
- Of current Mittelbau members, 29.9% felt **disadvantaged due to age**. (We did not specifically target this type of discrimination in the survey to former Mittelbau members.)
- There were 6.2% fewer **women** among former D-USYS members (32.8%) than among the responding current Mittelbau members (39% women).
- Over 55% of current Mittelbau members do not have **children**, compared to 62.7% of former Mittelbau members (difference not statistically significant). Of the employees with children, many commented that having children changed their career path, mostly by reducing mobility, available research time (some shifted to part-time employment), need for more security and shifted priorities.
- Not surprisingly there is a positive correlation between **frequency of career discussions and satisfaction with career support** through superiors. Almost 17% of current Mittelbau members said they “never” discussed career plans with their superiors. A total of 26.6% of current Mittelbau respondents felt “rather not satisfied” or

“not satisfied” with their superiors’ career support, similar numbers can be found for former Mittelbau members.

- **Career goals:** Most current Mittelbau respondents seem to desire a career in research, with a varying degree of readiness to compromise security and stability for that goal. The career steps toward a desired goal seemed “clear” to 28.8%, “rather clear” to 37% and “rather not” or “not clear” to a total of 34.2% of respondents.
- Almost 67% of former Mittelbau members were “rather satisfied” or “satisfied” with the **career perspectives** during their time at D-USYS. Just under 93% of former Mittelbau members thought that their time at D-USYS was “valuable” or “rather valuable” for their **career development**.
- **Careers of former Mittelbau:** Today, most former Mittelbau members are employed in the research sector (71.4%), followed by education (34.3%), the public sector (12.9%), and public administration and policy (10.0%). Only 4.3% of the respondents are in the “private sector”, and 2.9% (i.e. two respondents) currently work at a NGO.
- Former Mittelbau members often fulfilled or partly fulfilled the aspirations they held during their time at D-USYS. Their answers reflect a high level of satisfaction with the current professional activities. Their current tasks, positions and income levels are considered to be in good accordance with their level of qualification.
- Almost two thirds of former Mittelbau members (almost 65 %) report being in some kind of a **leadership position** today.
- Details about current Mittelbau members’ **main professional values** paint the familiar picture that Mittelbau employees are passionate critical thinkers, who love to do research and want to be independent, but value security also. They seem highly idealistic, valuing salary less than their chance to make a difference in the world, and they enjoy working with students. They also seemed to care greatly about the social atmosphere of their working environment.
- Former Mittelbau members rated the aspects of a work place that were most important to them. Their top three values were (1) A good working atmosphere, (2) The ability to express and use their own ideas, and (3) The ability to balance work and family life.
- **Becoming a Professor** is a career goal for 48.4% of the current Mittelbau members. Many regard a professorship as the ideal way for pursuing their own research continuously and independently. However, some do not

see it as a goal because they do not see the possibility for themselves, for example due to age limitations for assistant professorship positions. Further respondents do not aim for a professorship because they associate it with a switch from mainly doing research to a larger focus on administrative and supervisory activities and a high work and time load.

- For just under 30% of the current Mittelbau members **habilitation** is a career goal. Only 1.7% of respondents consider habilitation very much as their goal (compared to e.g. 13.6% having the goal of professorship and 34.8% having the goal to do research in a public institution). Some regard it as outdated and many doubt whether a habilitation is necessary and worth the effort as its benefits seem confined to

an academic career in German speaking countries. The societal and international recognition of a habilitation is thus questioned by many respondents.

- Current Mittelbau members saw two main areas in need of attention in order to **improve work-life at D-USYS**: (1) improving *recognition*; and (2) improving *the ability to plan and shape one's career*. In order to move forward in improving these two areas, respondents made seven main suggestions: (a) more permanent positions, (b) increased contract length, (c) removal of age limitations, (d) increased career transparency, (e) decreased size of professorships and more even power distribution, (f) quality assessment beyond number of publications, and (g) more influence on D-USYS and its curriculum (see Table 1).

Table 1

Main areas of concern of current Mittelbau members.

Two main areas of concern
1. Recognition
2. Ability to plan and shape one's career
Seven main suggestions to improve the Mittelbau's situation
(a) More permanent positions
(b) Increased contract length
(c) Removal of age limitations
(d) Increased career transparency
(e) Decreased size of professorships and more even power distribution
(f) Quality assessment beyond number of publications
(g) More influence on D-USYS and its curriculum

- In hindsight, former Mittelbau members were particularly enthusiastic about the following aspects of their past employment: (a) stimulating and inspiring working environment, (b) scientific freedom, (c) good infrastructure and generous support, (d) working climate, (e) opportunity to teach and supervise, (f) thematic diversity, and (g) international environment.
- In hindsight, former Mittelbau members were critical about the following aspects of their past employment: (a) limited career perspectives, (b) limited contract length, (c) steep power gradient in hierarchy, (d) difficulties when a professorial position was vacated, (e) lack of freedom, (f) lack of recognition, (g) difficulty collaborating and cooperating within D-USYS, and (h) lack of support.
- The desire for **recognition is a strong driver** behind calls for more permanent positions and longer-term contracts, perhaps more so than the desire for security.
- **In-depth interviews** confirmed the perceived lack of recognition and ability to plan and shape one's career. They also added essential detail in describing various practical difficulties faced with receiving grants.
- Sometimes professors and employees orally agree on **workarounds** – i.e. ways to tweak contractual conditions so that certain employment rules do not have to be applied. Such workarounds are risky, in particular for the employee.
- Another **risky situation** stands out: When a **professorial position is vacated** and refilled, independent researchers in the Mittelbau can experience new difficulties, because (1) they may be asked to take on much additional responsibility “in the interim” (that can be very long), and (2) they now need *formal* support by a new benevolent superior, even if they carry out all their responsibility without any *actual* support by a superior.
- Our impression from the incredible number of comments made throughout the survey is that many Mittelbau members experience a **culture of scarcity** with respect to support, recognition and security. However, science and experience indicates that performance and creativity – i.e. qualities D-USYS desires in their employees – are maximized in an environment full of meaning and safety (Maslow 1943, Kahn 1990, May et al. 2004). We suggest an experiential and science based reflection about what is lost from a working environment under conditions of excessive scarcity, and what is lost under conditions of excessive abundance. Our impression from the personal comments is that the number-one casualties in a culture of scarcity are creativity, innovation and loyalty. We are guessing that a culture of exces-

sive abundance would lead to a loss of a sense of direction or determination and a certain amount of complacency.

- There seems to be a diversity of **leadership styles** in professors, ranging on a gradient between two basic views of how to manage a research group: One is based on the belief that people are **externally motivated** (leading to an environment of scarcity to keep people “hungry”), one is based on the belief that people are **internally motivated** (leading to an environment of support and service). It seemed helpful to us to reflect on two extremes within this spectrum of

leadership styles, which we dubbed “old-day professor” and “modern professor”, as portrayed in Table 2. Research indicates that for tasks that involve cognitive engagement, internal motivation plays a bigger role than external motivation (Pink 2009).

- Current Mittelbau members seem to favour a **shift toward “modern professor”-leadership styles and smaller working groups**. The challenge in providing inspiring leadership seems to be to balance pressure (through competition and incentives) with security (through community and empowerment, see Table 2).

Table 2

Juxtaposing two extreme ends of a spectrum of leadership styles. In our study we received many statements and hints on leadership styles that exist at D-USYS. Over time a picture emerged, portraying D-USYS as in the midst of a transition between two styles of leadership, which we call here “old-days professor” vs. “modern professor”. We offer this juxtaposition here as an organizing frame and basis for reflection

	“Old-days professor”	“Modern professor”
Leadership	Leadership as expression of authority	Leadership as service, empowering her/his employees to advance their careers
Team-leader’s focus	Main focus is to use her/his team to propel him/her forward	Main focus is to use her/his team to move a shared vision forward
Employees	Need to be educated and controlled. Getting the most out of them is key.	Need to be supported and empowered. Furthering their careers is key.
Motivation	Is mainly external (outside incentives and control are needed)	Is internal (flourishes with a degree of support, challenge, recognition, responsibility and freedom).
Achievement is a function of...	...talent, incentive and pressure.	...talent, alignment with meaning, chance, community, and mutual empowerment.
Success believe	“I am in my position because of my intelligence and hard work.”	“I am in my position because I bring the necessary skills, had some luck and was supported by a community.”
Self-image	I need to know everything in my area of expertise. I hope nobody notices that I do not know everything.	I cannot know everything in my area of expertise. I need to be honest about my limitations and ask for help when needed.
Entitlement	Being a professor is a big deal.	Being a professor is nice, and it’s a job like many.
Organisation	Steep hierarchy	Not so steep hierarchy

ETH Zürich
USYS TdLab
CHN K 78
CH-8092 Zürich
info-tdlab@ethz.ch

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