How can we better attract foreign researchers to Japan while encouraging Japanese researchers to return?

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外国人研究者を日本に惹きつけ、日本人研究者の帰国を促すには？

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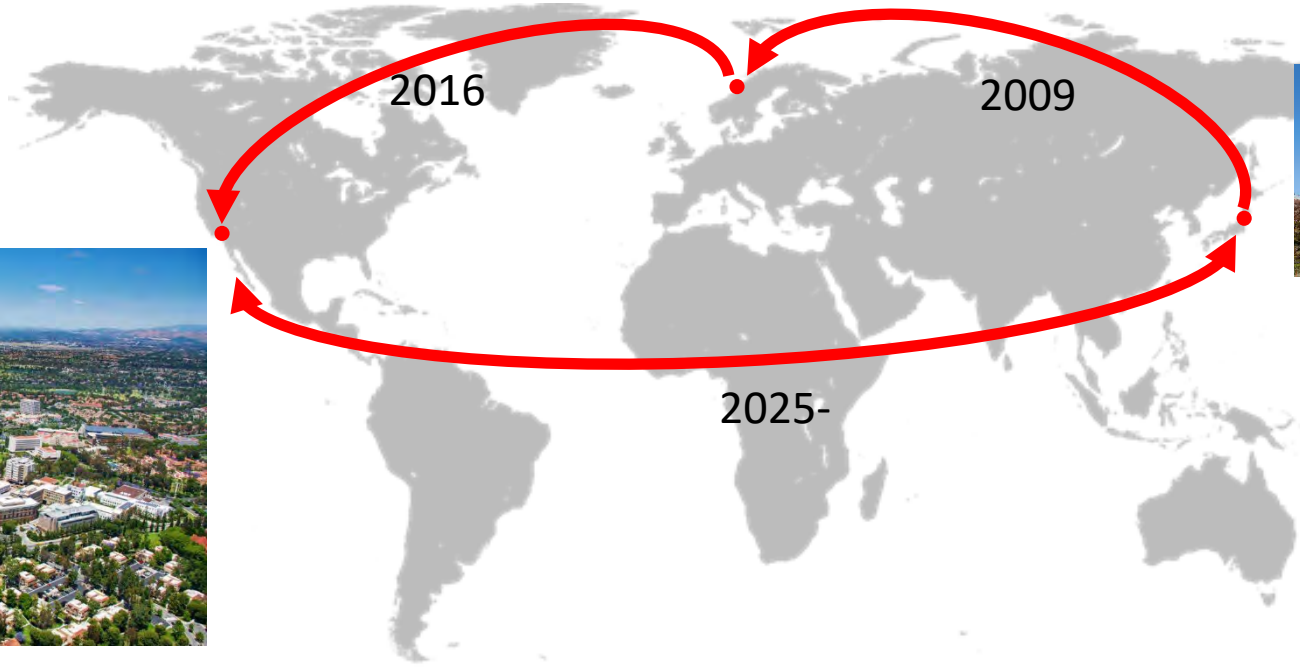
日本学術会議| Feb12, 2026

My wandering life …

Trondheim, Norway 63° North

E. Moser M-B. Moser

2009 – 2015 Postdoc, Norwegian University of Science and Technology



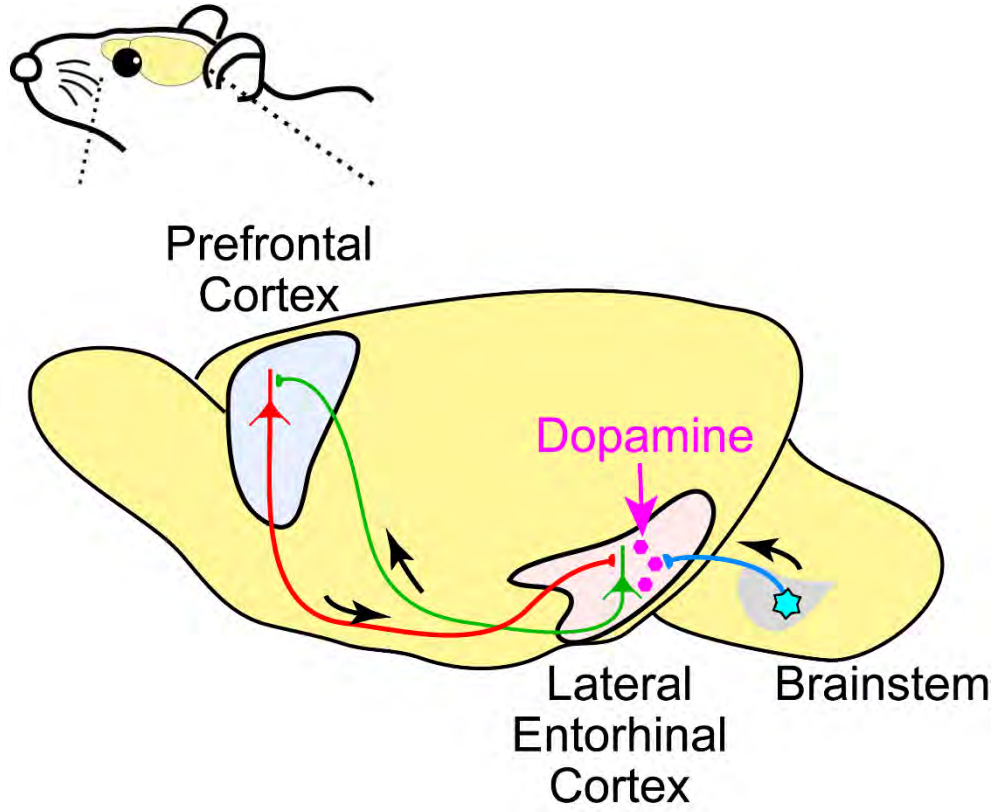
2001 BS, 2003 MS, 2007 PhD
University of Tokyo

2016- Assist Prof, 2022- Assoc Prof,
University of California, Irvine

TOHOKU UNIVERSITY 東北大学 TOHOKU UNIVERSITY

2025- Professor,
Tohoku University School of Medicine

My research: brain mechanisms of olfactory memory



- **Identified the brain region for olfactory memory (Nature 2014)**
- **Found the involvement of dopamine in memory (Nature 2021)**
- **Identified a new brain circuits for memory (Nature 2024)**

My talk today:

1. Research environment in **Norway** (as a postdoc)

2. Research environment in the **US** (as a faculty)

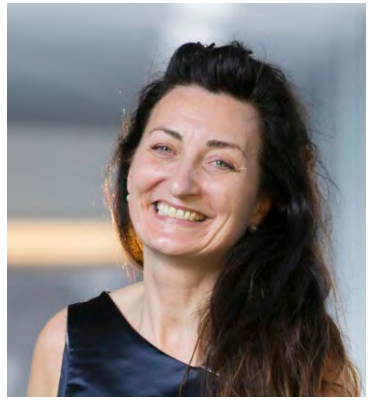
3. How can we improve Japanese research environment more attractive?

Point A: Happy environment for trainees
(grad students/postdocs)

Point B: Happy environment for faculty
(professors/group leaders)

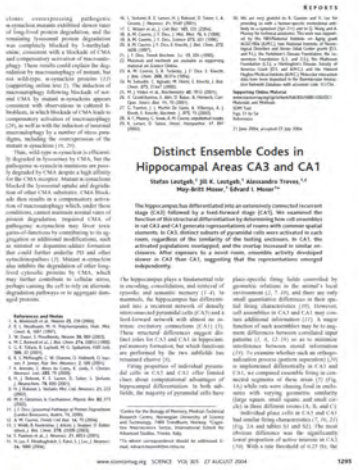
1. Research environment in **Norway** (as a postdoc)

Why did I move to Norway in 2009?

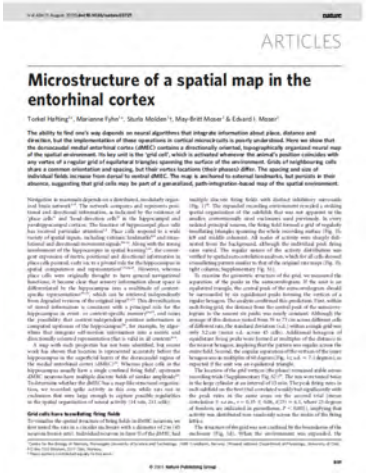


E. Moser M-B. Moser

Professors, Norwegian University of Science and Technology



Science, 2004

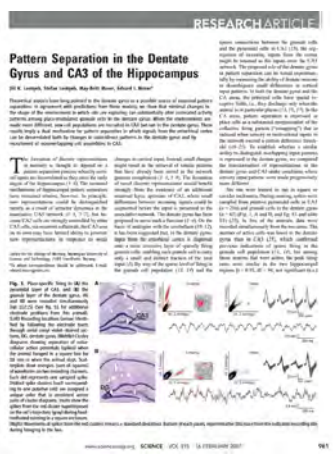


Nature, 2005

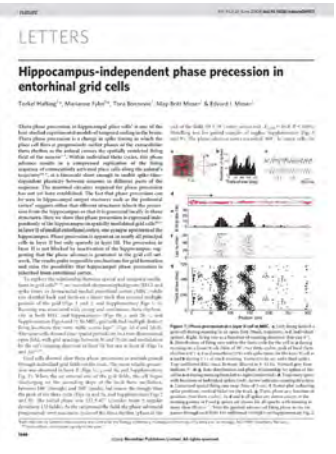
Science, 2005

Science, 2006

Nature, 2007



Science, 2008



Nature, 2008

There are super star neuroscientists in Norway

I joined their lab as a postdoc

Norwegian University of Science and Technology (NTNU) (Trondheim, Norway)

- Trondheim: **3rd biggest city** in Norway
- Population: 200,000 (including 40,000 NTNU students)
- One of the 4 main universities in Norway
- Top tech institute in Norway

Norway:

- Significantly invests their money obtained from the oil industry to research.
  This is to raise industries that may can replace oil industry in the future

- Large investment to NTNU for decentralizing universities across the country

The Moser lab at NTNU

- Supported by the **$3M/year Center for Excellence grant.**
  (10-year renewable program similar to ERATO grant in Japan)
- 2 Professors, 10 postdocs, 10 grad students, 15 technicians

- Postdocs are from all around the world (MIT, Caltech, UCL, …)
- Graduate students are also from top institutes (Peking Univ, Oxford, …)
- 80% of CBM trainees are international. Europe : US : Asia = 8 : 1 : 1

Talent recruitment mechanisms that allows successful research by Drs. Mosers

A: Happy environment for trainees: High quality research and generous salaries

High salary for trainees: $50,000/year (800万円/年) for grad students
$60,000/year (940万円/年) for postdocs

- Great benefits. Pension and 1-year parental leave with full salary covered.
- Renewable 3-year contract that allows stable research continuation

B. Happy environment for faculty:
Generous funding to keep Drs. Mosers in Norway

- Center of Excellence grants in Norway. **Mosers obtained this grant at the age of 40.**
- Grants also from European Research Council (ERC)

Nobel Prize in Medicine 2014

The Nobel Prize in Physiology or Medicine 2014
John O'Keefe, May-Britt Moser, Edvard I. Moser

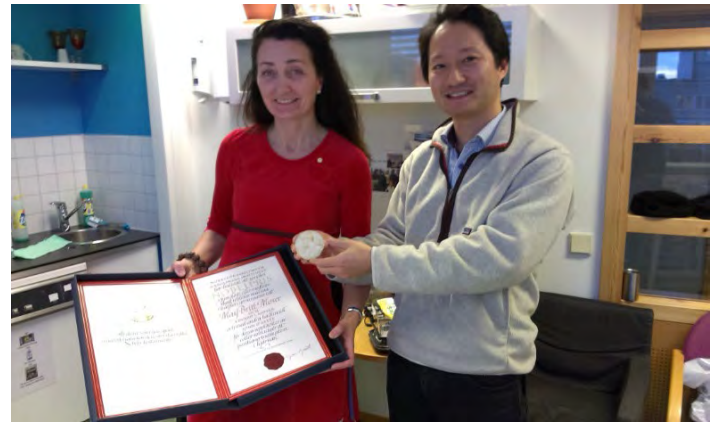
Share this: 2K

The Nobel Prize in Physiology or Medicine 2014

Photo: A. Mahmoud
John O'Keefe
Prize share: 1/2

Photo: A. Mahmoud
May-Britt Moser
Prize share: 1/4

Photo: A. Mahmoud
Edvard I. Moser
Prize share: 1/4



Mosers got Nobel Prizes at the age of 52. The investment paid off!

2. Research environment in the **US** (perspective as a faculty)

A. Happy environment for trainees

1. Trainees receive generous salaries

	US $	$1 = 157円	$1 = 120円
Graduate students	$36,000 ～ $42,000/year	550万円 ～ 650万円/年	430万円 ～ 500万円/年
Postdocs	Year 1 $67,200/year ・・・ Year 6 $79,200/year	1年目 1050万円/年 ・・・ 6年目 1250万円/年	1年目 810万円/月 ・・・ 6年目 950万円/月

UC Irvine Salary Scale

2. UC Irvine provides affordable housings for grad students and postdocs

~$800/month for grad students (1-bed); ~$2,200 for postdocs (2-bed room)

Talented trainees drive our research

Sharon Lim
Postdoc
Singapore

Tatsuki Nakagawa
Postdoc
Japan

Jordan Donohue
Postdoc

Heechul Jun
MD-PhD student
South Korea

Jason Lee
PhD student

Leon Xie
PhD student
China

Yutian Zhang
PhD student
China

Yasmeen Medhat
Lab Technician

Ayana Ichii
Lab Technician

More than 50% of my lab members are international

B. Happy environment for faculty:

I moved to the US for a generous job offer

Job offer package at UC Irvine:

- Tenure-track
- Startup fund: $650,000
- 120m^2 Lab space
- Subsidized house for purchase
- Salary of $89,000
- Teaching duty (8 hours/year)

Offer package at K university, Japan (2015)

- 5-year, non-tenure track Associate Professor
- Startup fund: up to $150,000
- You need to work in a Full Professor's lab
- Subsidized rental housing
- Salary of 840万円
- No teaching duty

This is a typical offer for an assistant professor at US Universities.
Generous packages at US universities attract researchers

US grants mechanism is also attractive for faculty

R01 grant from NIH (National Institute of Health):

the most typical biomedical grant

- $250,000 – $500,000 /year (4000 - 8000万円/年) x 5 years.
- One PI can obtain multiple R01 grants for distinct projects (no limit)
- Dollars for salaries and consumables (reagents etc). NOT for equipment!

Investment for researchers, not equipment

My annual budget around 2020:

- $100,000/year from the UC Irvine startup fund
- $750,000/year from 3x NIH R01 grants
- $100,000/year from foundation grants (Alzheimer's Association, etc)
- $72,000/year from Japan Science and Technology Agency (JST さきがけ)

Total　$1,022,000/year (1.1億円/年)

I may not be able to obtain this funding as an assistant/associate professor in a Japanese university

3. How can we improve Japanese research environment more attractive?

A. Happy environment for trainees in Japan??

	Annual Salary (JSPS Research Fellow DC/PD)		Salary in tech industry (after BS and PhD, respectively)	
Graduate students	230万円/年	$23,000/year	500万円/年	$41,600/year
Postdocs	435万円/年	$36,200/year	800万円/年	$66,600/year

*Calculated with $1 = 120円

Graduate salary is not realistic for an independent life.

Postdoc salary is not enough for researchers who have family.

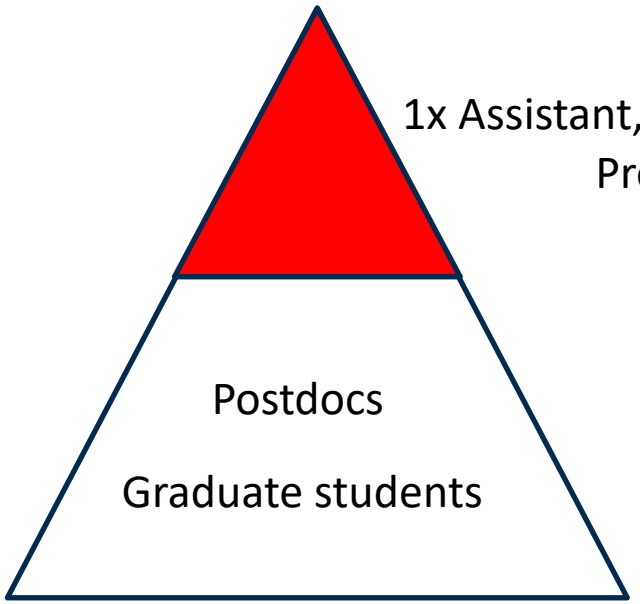
To make our trainees happy, we need to double their salaries!

It is also hard to recruit postdocs from abroad with the current salary.

B: Happy environment for faculty in Japan??

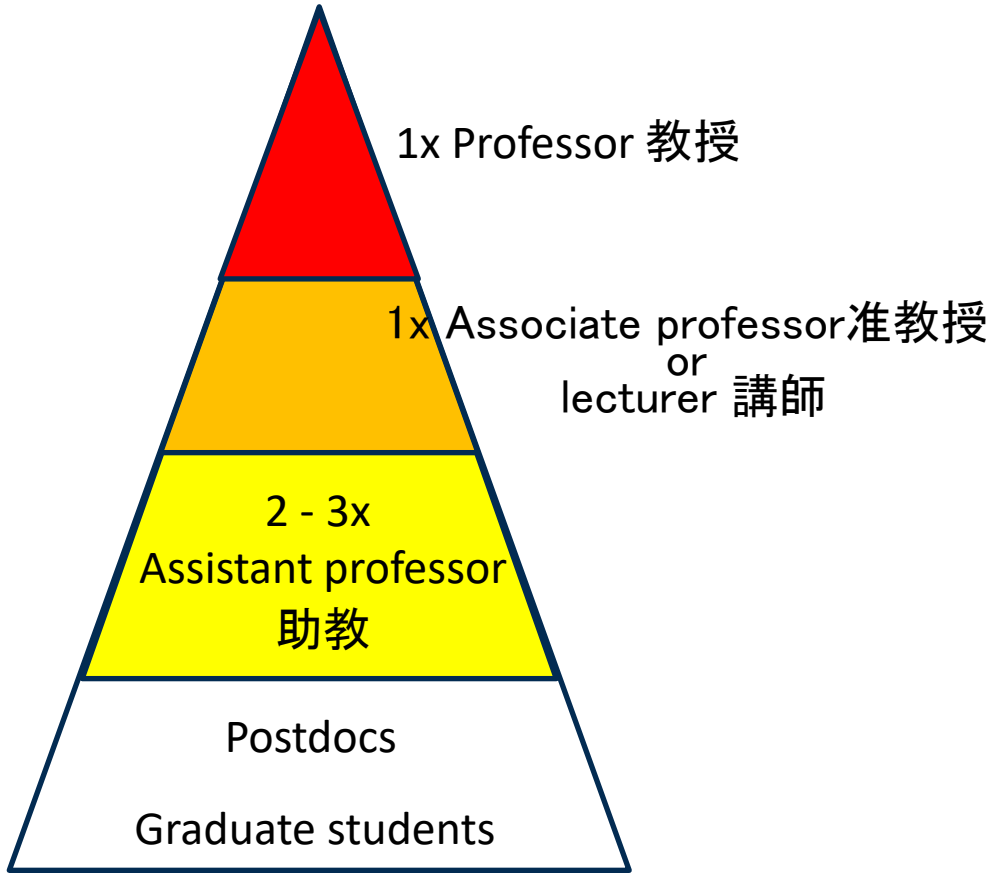
Lab structures in Japan discourage junior faculty's independence

US



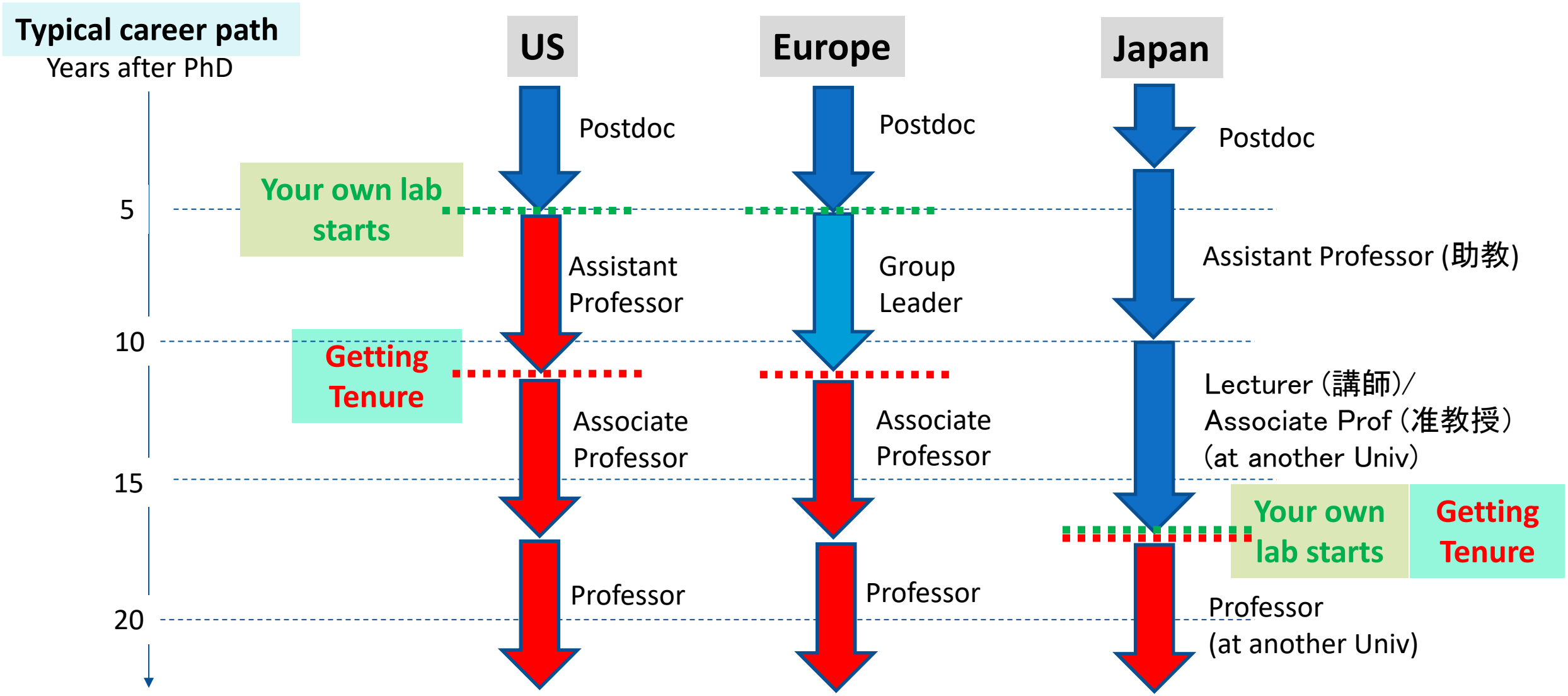
Assistant, Associate and Full professors have their own labs in the US.
They are all Principal Investigators (PI).

Japan



Full professor is the only principal investigator.

The hierarchical structure delays independence of young researchers in Japan



You can have your own lab 7-10 years after PhD in the US/Europe
But in Japan you need to spend 10 ~20 years after PhD.

Why early independence matters?

You have decent knowledge and energy in your 30s – 40s (but less energy after 50s)

When you become independent, all projects are your own. This significantly motivates you compared to being a trainee.

Susumu Tonegawa
Nobel laureate 1987

Your peak as a scientist is at your 30s and 40s.

（「精神と物質」より）

1968	29 yo	PhD., UCSD
1969	30 yo	Postdoc, Salk Institute
1971	**32 yo**	**Member, Basel Institute for Immunology（PI）**
1976	**37 yo**	**Finding that leads to Nobel Prize** (Hozumi & Tonegawa, PNAS)
1987	48 yo	Nobel Prize

Edvard & May-Britt Moser

1994	32 yo	PhD., Oslo University
1994	32 yo	Postdoc, Richard Morris lab
1996	**34 yo**	**Associate Professor, Norwegian University of Sci & Tech（PI）**
1998	36 yo	First Science paper from the lab (LTP saturation)
2002	40 yo	$3 M x 10 years grant from Norwegian Research Council
		This accelerated their lab
2005	**43 yo**	**Finding that led to Nobel Prize（Grid cell）**
		Nature papers x 9、 Science papers x 8 in 9 years
2014	52歳	Nobel Prize

Large grants are not accessible for junior faculty

Grants	Amount	Duration	Typically hold by
Tokusui 特別推進	$760,000/year (～1.2億円/年)	5 years	Senior Full Professor
Kiban S 基盤S	$250,000/year (～4千万円/年)	5 years	Senior Full Professor
Kiban A 基盤A	$57,000/year (～900万円/年)	5 years	Full/Assoc Professor
Kiban B 基盤B	$32,000/year (～500万円/年)	4 years	Assoc Professor
Kiban C 基盤C	$8,000/year (～130万円/年)	3 years	Assist Professor

There is a “typical age” concept (although unwritten).
Assistant professors can only obtain small Kiban C or Kiban B grants.

Academic salaries in Japan are less competitive

	Japan	US (UC Irvine)
Assistant Professor 助教	600万円/年 $50,000/year	1500万円/年 $125,000/year
Associate Professor 准教授	800万円/年 $66,700/year	1840万円/年 $153,000/year
Full Professor 教授	1200万円/年 $100,000/year	2420万円/年 $202,000/year

*Calculated with $1 = 120円

Recruiting professors from abroad is difficult

But, new movement is happening in Japan…

University for Research Excellence (UREX) Program 国際卓越事業

UREX1
JAPAN'S FIRST UNIVERSITY FOR INTERNATIONAL RESEARCH EXCELLENCE
TOHOKU UNIVERSITY

$100M/year funding for Tohoku University started 2025. This fund allows:

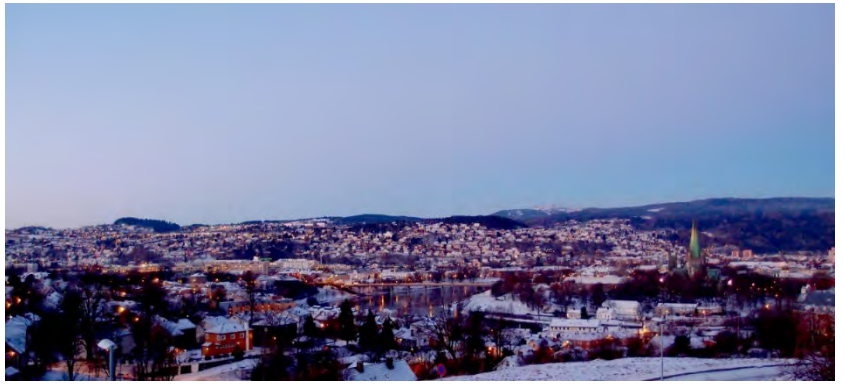
- $200,000 - $500,000/year salary for distinguished professor
- high salary for graduate students
- Independent PIs from assistant professor

My message is simple:

Let’s make happy environment for trainees and faculty!

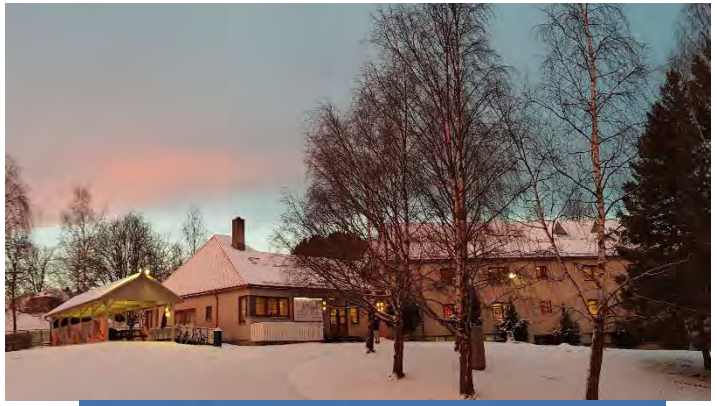
Happy environment will attract not only domestic researchers but also international researchers!!

NTNU and Trondheim City promotes international talents



- Small City – they need human resource!
- NTNU also promotes startups

- Living cost and tax is high. But survivable with the high salary



- International schools (nursery – high school) are funded by Trondheim city and are affordable (~$300/month)

- Obtaining work visa is easy in Norway. Spouse can work.

This

Trondheim international school

US visa for researchers

Visa type	for	Duration
F1 visa	Undergraduate students Graduate students	4 year 5 years (used to be w/o limit)
J1 visa	Postdocs	5 years
H1b	Senior researchers (after J1)	3 years, with renewal

Unfortunately, this system is being modified by the current administration.
- H1b visa may not be used for researchers anymore
- F1 students are currently not allowed to exit from the US