



# European Particle Therapy Network

**Damien Charles Weber**

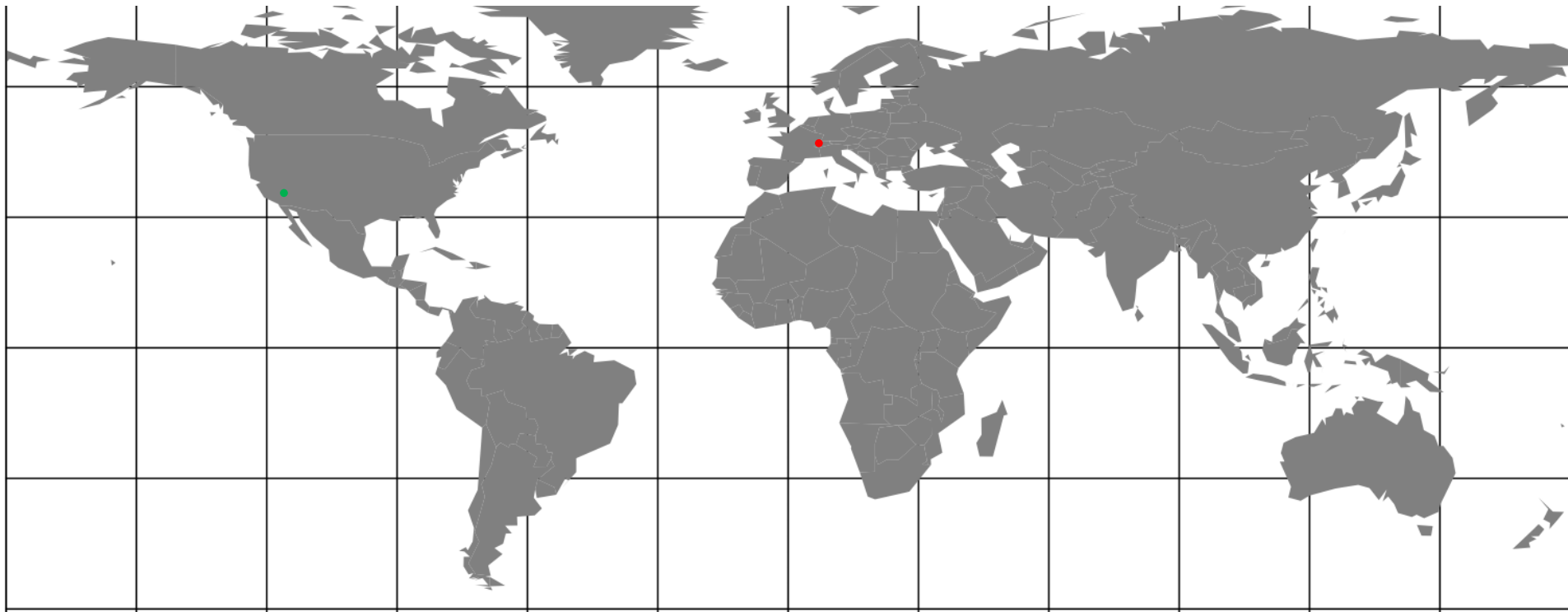
Paul Scherrer Institut, ETH Domain  
Switzerland

**Cai Grau**

Danish Center for Particle Therapy  
Aarhus, DK

**On behalf of the EPTN**

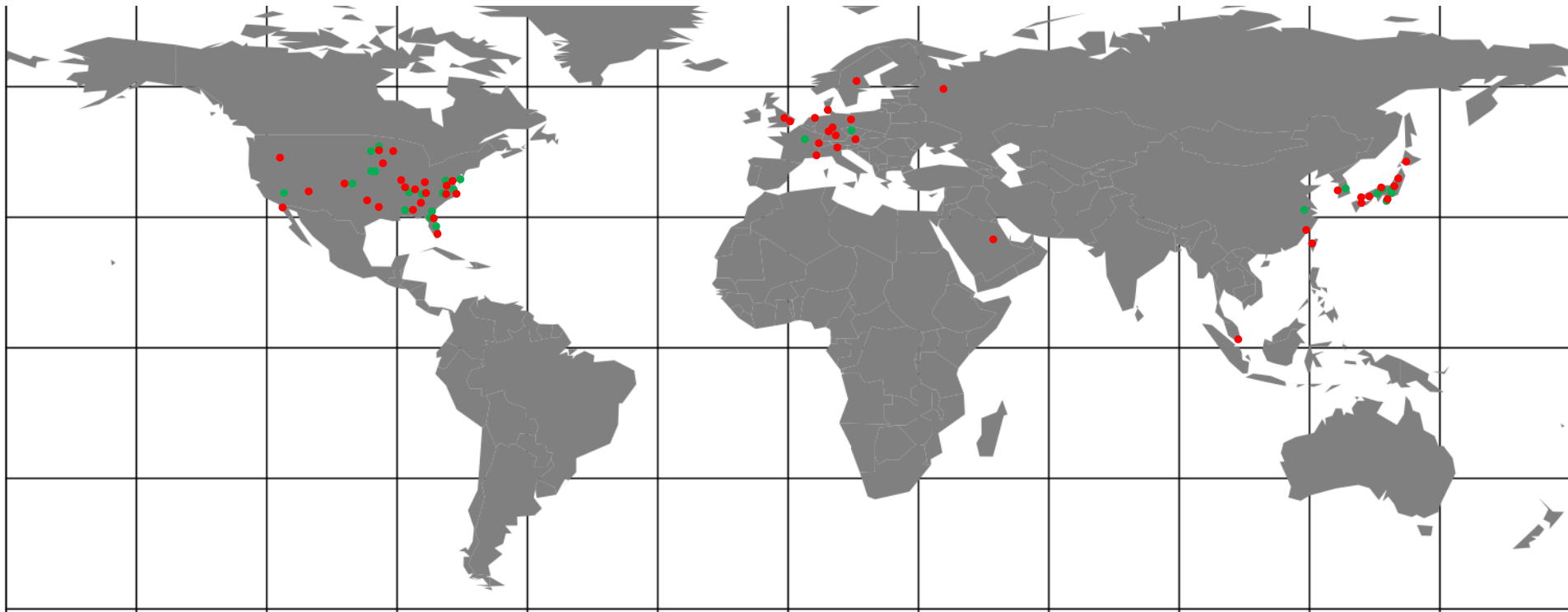
# Spreading of Proton Therapy Technology (1996)



● Passive Scattering  
(Pioneered by Loma Linda/FermiLab)

● Pencil Beam Scanning  
(Pioneered by PSI)

# Spreading of Proton Therapy Technology (2020)

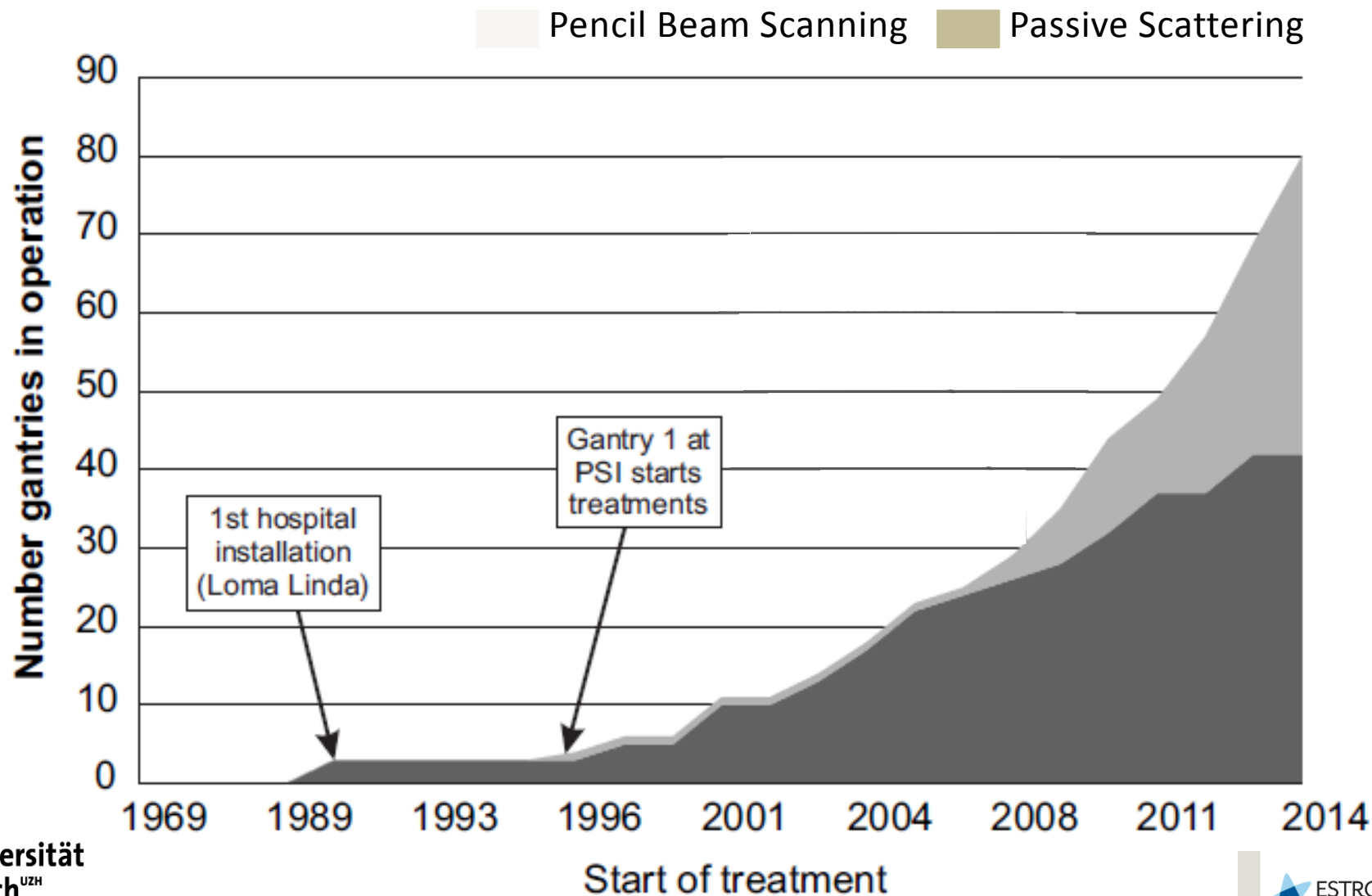


● Passive Scattering

● Pencil Beam Scanning

# Spot Scanning – The State of the Art Technique

## Worldwide Number of Gantries for Proton Therapy



## Economic Evaluation in Health Care

**What is the acceptable amount of money society is ready to pay per LYG or per QALY(G)?**

**Aging of baby boomers**

**Delivery of costly new treatment**

**Driver of cancer costs**



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graph LR; A[Driver of cancer costs] --> B[Aging of baby boomers]; A --> C[Delivery of costly new treatment];
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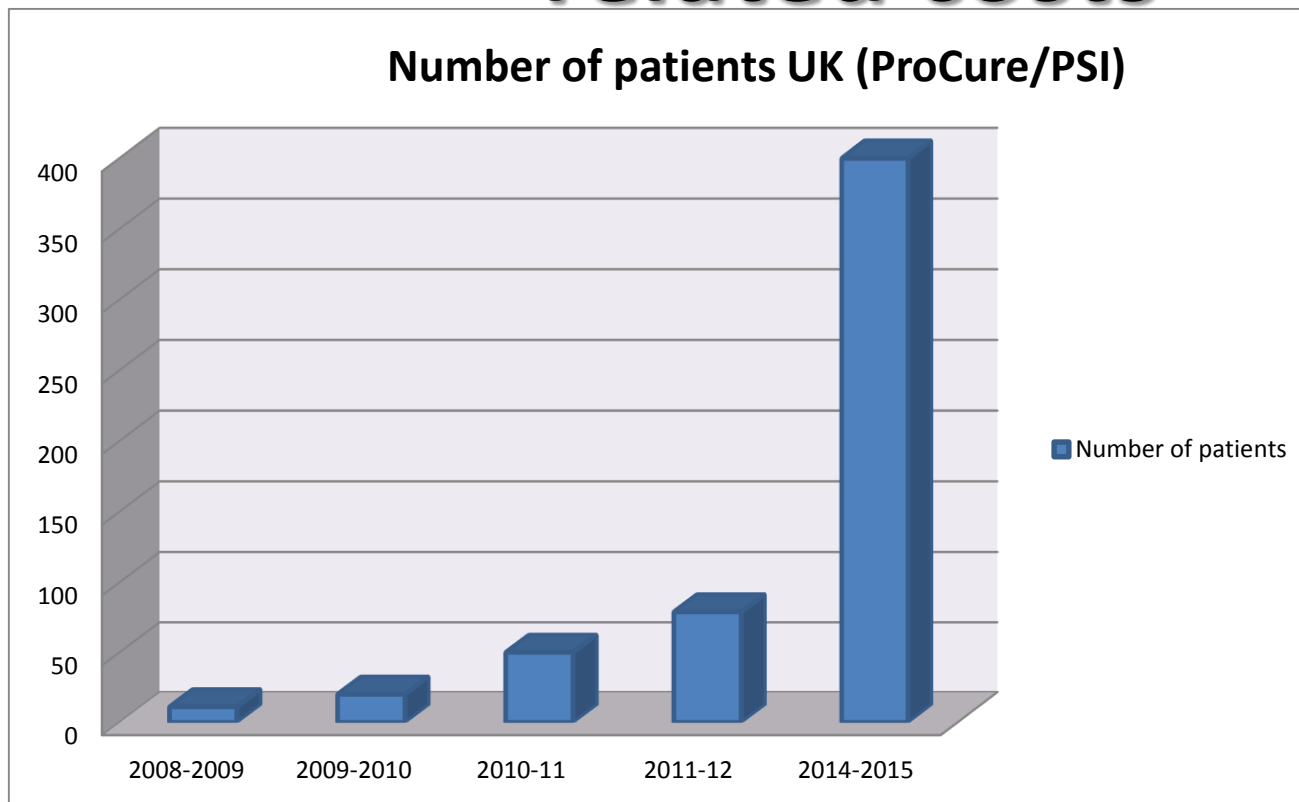
**What is the acceptable amount of money society is ready to pay per LYG or per QALY(G)?**

[Printz C. Cancer.](#) 2013 Feb 1;119(3):473.  
doi: 10.1002/cncr.27963.



# Proton therapy and health-related costs

*Cost 30 millions GBP in 2014-2015*



Department of Health. Centres selected to host cutting-edge cancer services. Press release, 5 April 2012. <http://mediacentre.dh.gov.uk/2012/04/05/centres-selected-to-hostcutting-edge-cancer-services/>.

Particle Therapy Patient Statistics (per end of 2016)

(Data collected by the Particle Therapy Co-Operative Group)

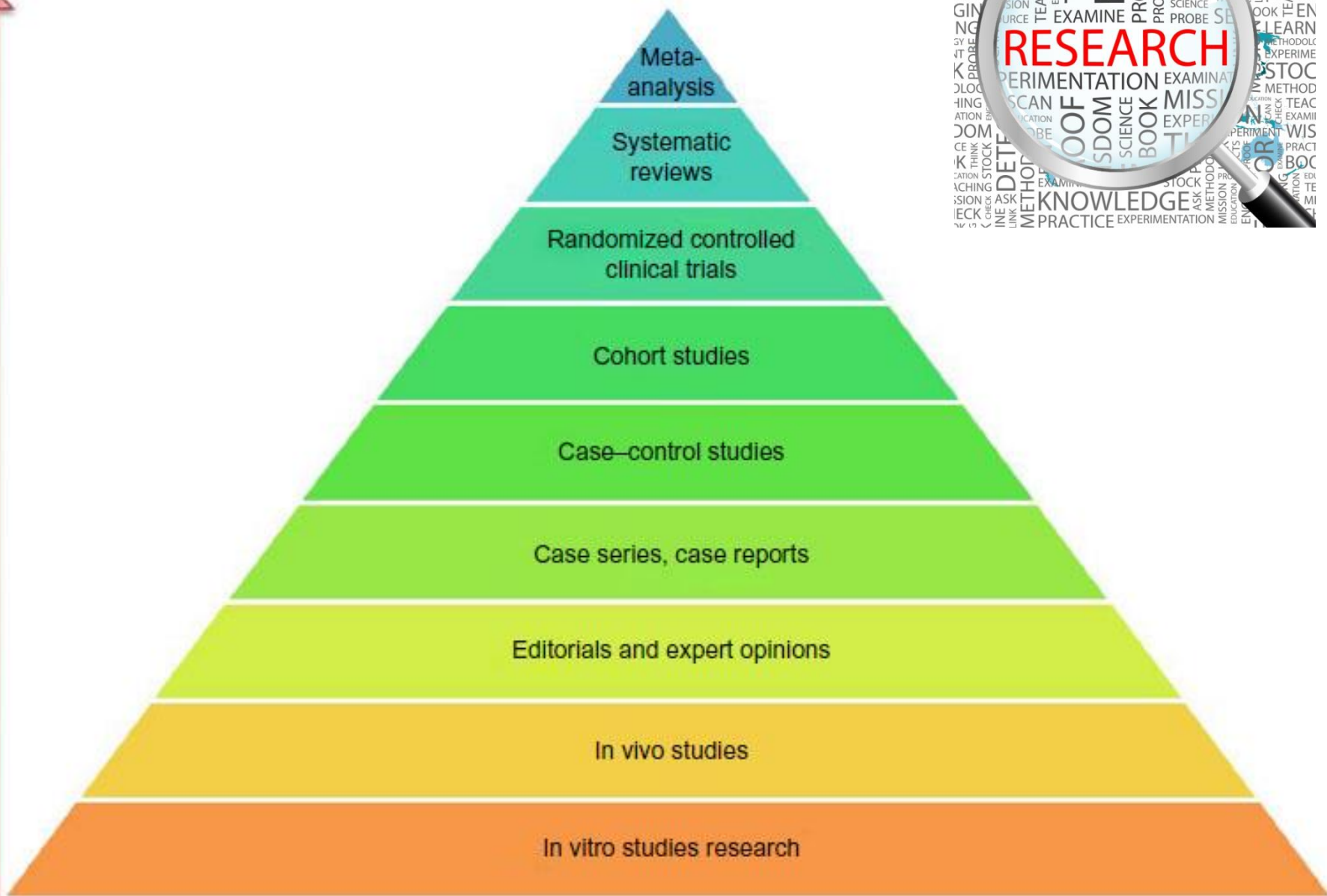
COUNTRY	WHERE SITE	PARTICLE	FIRST (-LAST) PATIENT	PATIENT TOTAL	DATE OF TOTAL
Belgium	Louvain-la-Neuve	p	1991 (-1993)	21	1993
Canada	Vancouver (TRIUMF)	π	1979 (-1994)	367	1994
Canada	Vancouver (TRIUMF)	p	1995	196	Dec-16
Czech Rep.	Prag (PTCCZ)	p	2012	1538	Dec-16
China	Wanjie (WPTC)	p	2004	1076	Dec-16
China	Lanzhou	C-Ion	2006	213	Dec-16
China	Shanghai (SPHC)	p	2014	161	Dec-16
China	Shanghai (SPHC)	C-Ion	2014	350	Dec-16
England	Catterbridge	p	1989	3020	Dec-16
France	Nice (CAL)	p	1991	5772	Dec-16
France	Orsay (CPO)	p	1991	8131	Dec-16
Germany	Darmstadt (GSI)	C-Ion	1997 (-2009)	440	2009
Germany	Berlin (HZB)	p	1998	2975	Dec-16
Germany	Munich (RPCT)	p	2009	3086	Dec-16
Germany	HIT, Heidelberg	p	2009	1523	Dec-16
Germany	HIT, Heidelberg	C-Ion	2009	2430	Dec-16
Germany	WPE, Essen	p	2013	673	Dec-16
Germany	UPTD, Dresden	p	2014	300	Dec-16
Italy	Catania (INFN-LNS)	p	2002	350	Dec-16
Italy	Pavia (CNAO)	p	2011	292	Dec-16
Italy	Pavia (CNAO)	C-Ion	2012	616	Dec-16
Italy	Trento (APGG)	p	2014	204	Dec-16
Japan	Chiba	p	1979 (-2002)	145	2002
Japan	Tsukuba (PMRC, 1)	p	1983 (-2000)	700	2000
Japan	Chiba (HIMAC)	p	1994	138	Dec-16
Japan	Chiba (HIMAC)	C-Ion	1994	10692	Dec-16
Japan	Kashiwa (NCC)	p	1998	2480	Dec-16
Japan	Hyogo (HIBMC)	p	2001	5392	Dec-16
Japan	Hyogo (HIBMC)	C-Ion	2002	2527	Dec-16
Japan	WERC	p	2002 (-2009)	62	2009
Japan	Tsukuba (PMRC, 2)	p	2001	4788	Dec-16
Japan	Shizuoka (PTCC)	p	2003	1966	Dec-16
Japan	Koryama-City (STPTC)	p	2008	3751	Dec-16
Japan	Gunma (GHMC)	C-Ion	2010	2231	Dec-16
Japan	Ibusuki (MIMRI)	p	2011	1991	Dec-16
Japan	Fukui City (Prefectural Hospital)	p	2011	646	Mar-15
Japan	Nagoya (Nagoya PTC)	p	2013	1496	Dec-16
Japan	Tosu (Saga-HIMAT)	C-Ion	2013	1776	Dec-16
Japan	Nagano (Aizawa PTC)	p	2014	135	Dec-16
Japan	Hokkaido (Univ. Hospital PBTC)	p	2014	153	Dec-16
Japan	Kanagawa (I-Rock)	C-Ion	2015	105	Dec-16
Poland	Krakow (IFJ PAN)	p	2011	167	Dec-16
Russia	Dubna (1)	p	1967 (-1996)	124	1996
Russia	Moscow (ITEP)	p	1969	4368	Dec-16
Russia	St. Petersburg	p	1975	1386	Dec-12
Russia	Dubna (JINR, 2)	p			
South Africa	Capetown (Themba LABS)	p			1999
South Korea	Ilsan, Seoul (KNCC)	p			1993
South Korea	Seoul (Samsung PTC)	p			2007
Sweden	Uppsala (1)	p			2015
Sweden	Uppsala (2)	p			1957 (-1976)
Sweden	Uppsala (The Skandion Clinic)	p			1989 (-2014)
Switzerland	Villigen PSI (Pilotron)	π			2015
Switzerland	Villigen PSI (OPTIS 1)	p			1980 (-1993)
Switzerland	Villigen-PSI, ind OPTIS2	p			1984 (-2010)
Taiwan	Taoyuan, Chang Gung Memorial	p			1996
USA, CA.	Berkeley 184	p			1996
USA, CA.	Berkeley	He			2015
USA, NM.	Los Alamos	π			1954 (-1957)
USA, CA.	Berkeley	Ions			1957 (-1992)
USA, MA.	Harvard (HCL)	p			1974 (-1982)
USA, CA.	Loma Linda (LLUMC)	p			1975 (-1992)
USA, IN.	Bloomington (MPRI, 1)	p			1961 (-2002)
USA, CA.	UCSF - CNL	p			1990
USA, MA.	Boston (NPTC)	p			1990
USA, IN.	Bloomington (IU Health PTC)	p			1993 (-1999)
USA, TX.	Houston (MD Anderson)	p			1994
USA, FL.	Jacksonville (UFPTI)	p			1994
USA, OK.	Oklahoma City (ProCure PTC)	p			2001
USA, PA.	Philadelphia (UPenn)	p			2004 (-2014)
USA, IL.	CDH Warrenville	p			2006
USA, VA.	Hampton (HUPTI)	p			2006
USA, NY.	New Jersey (ProCure PTC)	p			2006
USA, WA.	Seattle (SCCA ProCure PTC)	p			2006
USA, MO.	St. Louis (S. Lee King PTC)	p			2006
USA, TN.	Knowlville (Provision Center)	p			2006
USA, CA.	San Diego (Scorpps PTC)	p			2006
USA, LA.	Shreveport (Willis Knighton)	p			2006
USA, FL.	Jacksonville (Ackerman CC)	p			2006
USA, MN.	Rochester (Mayo PBTC)	p			2006
USA, NJ.	Brunswick (Laurie PC)	p			2006
USA, TX.	Irving (Texas Center for PT)	p			2006
USA, TN.	Memphis (St. Jude Red Frog)	p			2006
USA, AZ.	Phoenix (Mayo PBTC)	p			2006
USA, MD.	Baltimore (Maryland PTC)	p			2006
USA, OH.	Cincinnati (Children's PTC)	p			2006
USA, FL.	Orlando (Orlando Health PTC)	p			2006
USA, OH.	Cleveland (UH Sideman PTC)	p			2006

Total of all facilities (in and out of operation):

He	2054	1957-1992
Pions	1100	1974-1994
C-ions	21580	1994-2016
Other ions	433	1975-1992
Protons	149345	1954-2016
<b>Grand Total</b>	<b>174512</b>	1954-2016



Provide stronger evidence



Low Level of evidence for particle therapy

# Mission statement

- to promote clinical and research collaboration between the rapidly increasing number of European particle therapy centers and to ensure that particle therapy becomes **integrated in overall radiation oncology community.**”

# EU Needs in Particle therapy

- *Urgency to produce high-quality clinical data in the realm of Particle therapy.*
- *The time window is appropriate due to the number of particle centers that will come online in Europe by 2018 and 2020.*
- *The utilization of the EORTC technology and methodological platform would be a good instrument for the network to provide relevant data in the field.*
- *EPTN needs to liaise with the European stakeholders to convincingly promote the needs and potential of particles.*

# A short story....

- Weber & Baumann initiate a TC in Summer 2014 (PTCOGGeu?, ESTRO?, de novo society)
- First meeting in BRU 2015
- Second meeting in BRU 2016: **EPTN**
- Third meeting in BRU 2017: **Task force ESTRO**  
(Board decision February 2017)
- Forth meeting in London June 2018 with ENLIGHT meeting

# Task force ESTRO



## MISSION & VALUES

## GOVERNANCE / ORGANISATION

- ▶ [General Assembly](#)
- ▶ [Board](#)
- ▶ [Policies](#)
- ▶ [Executive Council](#)
- ▶ [Education Council](#)
- ▶ [Stakeholders' Council](#)
- ▼ [Scientific Council](#)
  - ▶ [Committees](#)
  - ▼ [Task Forces](#)
    - ▶ [European Particle Therapy Network](#)

## ESTRO TASK FORCES

Task forces are created upon Board approval. They are either for a determined period of time or for a determined project. Task forces under the Scientific Council, report to this council.

### [European Particle Therapy Network \(EPTN\)](#)

## DOWNLOADS

[ESTRO Vision for Radiation Oncology](#)  
[ESTRO statutes](#)  
[ESTRO 30th Anniversary Book](#)  
[2016 Annual Report](#)

WP	Title	Coordinators
1	Clinical	Hans Langendijk (Groningen, NL)-Leader Roberto Orecchia (Milano, IT) Karin Hausterman (Leuven, BE) Daniel Zips (Tuebingen, DE) Jacques Balosso (Grenoble, FR) Esther Troost (Dresden, DE)
2	Dose assessment, quality assurance, dummy runs, technology inventory	Oliver Jäckel (Heidelberg, DE) Sairos Safai (Villigen, CH) Stefan Menkel (Dresden, DE)
3	Education	Morten Høyer (Aarhus, DK) Marco Schwarz (Trento, IT)
4	Image Guidance in particle therapy	Aswin Hoffmann (Dresden, DE) Alessandra Bolsi (Villigen, CH)
5	TPS in particle therapy	Håkan Nyström (Uppsala, SE) Tony Lomax (Villigen, CH)
6	Radiobiology, RBE	Manjit Dosanjh (Geneva, CH) Bleddyn Jones (Oxford, UK) Jörg Pawelke (Dresden, DE) Martin Prutschy (Zurich, CH) Brita S. Sørensen (Aarhus, DK)
7	Health Economy	Yolande Lievens (Ghent, BE) Klaus Nagels (Bayreuth, DE)

# Increase of Visibility of PT in Eu

**Session Title: European Particle Therapy Network (EPTN)**

**Session Date and Time: 22-04-18 from 08:45 to 10:00**



**Next meeting: 4th EPTN meeting June 28th 2018**



**ENLIGHT Annual Meeting and Training 2018, London**