PTCOG Newsletter #5 | Early Carrier Researchers ECR

Fire up your engines , PTCOG-63 is knocking at the door! Our annual meeting to share the hard work of the past year and stay on track with the advancement of particle therapy from all over the world!

Within a busy but exciting schedule of scientific talks, workshops, summits, subcommittee meetings, industry exhibitions, and networking events, if you look carefully at the program, a three-letter name will recurrently pop up to your eye: ECR.

The **ECR, Early Career Researchers**, subcommittee is at the dawn of its second PTCOG annual conference! If last year PTCOG was a success for the ECR subcommittee, this year we hope it will be even more!

If you have any doubts, we will be recognisable thanks to our ***ECR stickers***! So we encourage everyone, from academia to clinics to industry, and especially senior people, to **engage with us**! Meeting, chatting and exchanging opinions with more experienced people cannot but help us grow up and learn, we come to PTCOG for this!

The ECR subcommittee has three simple goals, and we have been/are/will be doing everything to reach them:

1. To be a lighthouse for anyone who is new to PTCOG
2. To be a stronghold for all affectionate ECRs
3. To be heard from and to give something to the rest of PTCOG community

We have a busy schedule ourselves, including pre-conference events as well! So be sure not to miss anything!

- Wednesday 21st May, h 16-17 CEST – **PTCOG-ECR Webinars**: "Meet the Subcommittees (Part 1)". We really want to make sure you are not missing anything about PTCOG. Did you know PTCOG has a lot of different subcommittees focusing on specific research topics? We are going to present them all in a series of two webinars. This first webinar will feature: Pediatrics, Thoracic, BNCT, Gynecologic, CIRT Guidelines, Patient Relations, Gastrointestinal (GI), and Beam Delivery Technology subcommittees. Register here!

- Thursday 29th May, h 16-17 CEST – **PTCOG-ECR Webinars**: "Meet the Subcommittees (Part 2)". This second webinar of the series will feature: Breast, Genitourinary (GU), Ocular, Skull Base, CNS, and Sarcoma, AI, Radiobiology, and Treatment Efficiency subcommittees. Register here!

- From Tuesday, 3rd June to the end of the conference – **ECR Booth** in the Exhibition area! The ECR basecamp, where you will always find some ECR and you are always welcome whatever you seek: information on ECR events, information on the ECR subcommittee, a hug, a pause, sharing a dream, sharing your stress, sharing a success, sharing a flop, … Come and meet us, and don't forget to collect here the **ECR sticker**!

- Tuesday 3rd June, h20 ish – **ECR Social event**! Join us after the *Welcome Reception* for (a moderate number of) drinks and some good fun. This is the perfect chance of meeting other ECRs, making friendships that can last for a career-time, and (why not?) finding fresh minds to start scientific collaborations and come up with ground-breaking projects! We are making sure to have a place close to the conference venue which can host us all, and we will have a pub quiz and little games to propose…we just miss you! **Come and sign up for the ECR Social event at our ECR booth**!

- From Wednesday 4th June to the end of the conference –

a new mentoring format in collaboration with IBA! A one-to-one mentoring slot with some passionate IBA representatives, directly at the IBA booth. The initiative will run for the whole conference duration, upon reservation of the one-to-one slot. Additional details will come up soon. Stay tuned.

- Wednesday 4th June, h 11:45-12:30, Room: Atlantico A – the annual **ECR Subcommittee in-person meeting**! Where you can hear all the updates of this past year, the plans for next year, and discuss some main subcommittee-related topics together.

- Wednesday 4th June, h 12:30-13:30, Room: Executive Room Pacara A+B – the first **Mentor Lunch**: "Careers in Academia". Our exclusive mentor lunch event, dedicated to careers in academia. Join us and engage with this year's mentors: Pierre Montay Gruel, Nancy Mendenhall, Jacinta Yap, and Takahiro Oike. All ECRs are welcome to join the event by **signing up for it at the ECR booth** at PTCOG-63.

- Thursday 5th June, h 13:45-14:30, Room: Buen Ayre B&C Hall – **Plenary Session**: "How to deal with unexpected results", featuring Dr. Jason Efstathiou and Dr. Jeanette Jansen. A plenary session entirely organised and moderated by ECR, where we hope to see ECRs and not ECRs attending and to give you all some stimulating points of reflection on a topic complementary to the main scientific tracks! Come, listen, interact, …and reflect.

- Friday 6th June, h 12:30-13:30, Room: Buen Ayre A Hall – the second **Mentor Lunch**: "Careers in Industry". Our exclusive mentor lunch event, dedicated to careers in industry. Join us and engage with this year's mentors: Tina Yu (from Mevion), Erik Engwall (from RaySearch), Francois Vander Stappen (from IBA), and a fourth one to be confirmed. All ECRs are welcome to join the event by **signing up for it at the ECR booth** at PTCOG-63.

Additional information on ECR events can be found on the ECR page of PTCOG-63 website!

And if while waiting for PTCOG-63 to kick off you get bored, you are more than welcome to watch our first successful webinar “Career Opportunities in Industry” we held on the 23rd April! It is available for streaming via the PTCOG-63 platform at this link: https://ptcog63.org/virtual-login/ . If you have not registered yet, you can still do it here.

For now, it’s all. We really look forward to seeing you in Buenos Aires!
If you are lost, come and see us at the ECR Booth!

We are ready, we are excited, and we will light up PTCOG, once again!

Let’s do science when we work, and love each other the rest of the time!

Gabriele Parisi, on behalf of the PTCOG-ECR subcommittee

Timetable of meetings of the Subcommittees during PTCOG 63

Timetable of meetings of the Subcommittees during PTCOG 63

- **AI** | Thu 5th June | 9:30 – 10:15 | Buen Ayre A
- **BNCT** | Fri 6th June | 9:30 – 10:15 | Buen Ayre A

- **Beam Delivery** | Thu 5th June | 8:00 – 9:25 | Buen Ayre A
- **Breast** | Wed 4th June | 9:30 – 10:15 | Buen Ayre A
- **CIRT** | Wed 4th June | 9:30 – 10:15 | Atlantico B
- **Early Career Researchers** | Wed 4th June | 11:45 – 12:30 | Atlantico A
- **Education** | Wed 4th June | 8:30 – 9:15 | Atlantico A
- **GI** | Fri 6th June | 8:45 – 9:25 | Buen Ayre A
- **GU** | Thu 5th June | 11:45 – 12:30 | Atlantico A
- **Gynaecologic** | Thu 5th June | 11:45 –12:30 | Buen Ayre A
- **Head and Neck** | Thu 5th June | 15:15 – 16:00 | Atlantico A
- **Imaging** | Fri 6th June | 15:15 – 16:00 | Buen Ayre A
- **Lymphoma** | Fri 6th June | 10:45 – 11:30 | Buen Ayre A
- **Ocular** | Wed 4th June | 15:15 – 16:00 | Buen Ayre A
- **Patient relations** | Thu 5th June | 15:15– 16:00 | Buen Ayre A
- **Pediatric** | Wed 4th June | 9:30 – 10:15 | Atlantico A
- **Publication** | Wed 4th June | 10:45 –11:30 | Atlantico A
- **Radiobiology** | Wed 4th June | 17:15 – 18:00 | Atlantico A
- **Skull Base / CNS / Sarcoma** | Wed 4th June| 15:15 – 16:00 | Atlantico A
- **Thoracic** | Wed 4th June | 17:15 – 18:00 | Buen Ayre A
- **Treatment Efficiency** | Wed 4th June | 8:30 – 9:15 | Buen Ayre A
- **Subcommittee Presentations Plenary** | Fri 6th June | 13:30 – 14:30 | Buen Ayre B&C

PTCOG changes logo | Have a saying

During the congress in Buenos Aires, the participants can vote for the new PTCOG logo, which should replace our old and proven logo and give the PTCOG a modern face.

Please find below the 3 options to choose from.

Option 1

Option 2

Option 3:

Buenos Aires, a big and beautiful city, worth to be explored! (By Andrea Monti Hughes & Andrés Kreiner)

Dear PTCOG community,

It will be a huge honour to have you here, in Buenos Aires, to share and discuss our latest results in the field of Particle therapy, at the PTCOG 63rd Congress. However, you cannot leave Buenos Aires without being a tourist! We encourage you to explore our "*Buenos Aires Querido*" (Dear Buenos Aires), as it says one of our most famous Tango singers, **Carlos Gardel**. Plenty of activities are waiting for you. Buenos Aires is a big city, but bus and metro (called here "colectivo" and "subte") and the touristic city bus can help you to explore it. To have a quick overview of *what to do in Buenos Aires*, here we are sharing with you some of the most famous spots, from the Hilton Hotel in Puerto Madero (the Congress venue):

- **A nice walk around Puerto Madero:** it is a very nice corner in this big city, full of nice restaurants and parks to walk around. You can find the Woman Bridge, the Amalia Lacroze de Fortabat Art Collection Museum and the Costanera Ecological Reserve, a place "full of nature" inside this big city.
- **Government House – Plaza de Mayo – Cabildo – Buenos Aires Cathedral** (15 min walking distance): The Government House is called the "Pink" house. It is located on one of the sides of Plaza de Mayo, the oldest square in Buenos Aires, famous due to big popular

demonstrations and Mothers of Plaza de Mayo. Its name is a tribute to the Revolution of May 25th, in 1810, which took place in this same square and which started the Argentinean Independence. Around, you can find the Buenos Aires Cathedral and the Cabildo building. In the Spanish-American colonial context, the Cabildo was a municipal institution that exercised functions of local government, administration and justice. In all these important buildings very nice museums full of our national history can be found.

- **The quarter of San Telmo** (12 min by car): It is one of the oldest and most traditional neighborhoods in Buenos Aires that preserves much of its architectural heritage. If you want to listen and /or see a tango show, this is the place!
- **Plaza de Mayo – Mayo Avenue – Café Tortoni (Tortoni Bar) – Argentinian Congress** (2 hs walking tour)**:** Maybe it is a long walk, but it is worth making the effort! So nice due to the outstanding buildings elevated there, from an architectural point of view. You can have a nice coffee at Café Tortoni (a traditional Buenos Aires bar founded in 1858), finishing at the Monumental Argentinian Congress.
- **9 de Julio Avenue – Obelisco – Colon Theater – Lavalle square** (30 min walking distance): 9 de Julio Avenue is well-known as one of the widest (or maybe the widest

one!) avenues in the World. There you can find the Obelisk erected in 1936 to commemorate the fourth centenary of the first foundation of Buenos Aires, and where the Argentine national flag was raised in the city for the first time. To make this walking amazing, beautiful decorative fonts can be found in the boulevards but the Colon Theater takes all the attention. It was funded in 1908, and it is one of the best opera and ballet houses in the World, mainly due to its acoustics, its architecture and the artistic legends who were here. You can get tickets to make a nice tour inside, we totally recommend it. Lavalle square is behind the Colon Theatre, and it is a nice place to admire impressive architectural buildings, like the Colon and the National Cervantes theatres, the Palacio de Justicia (Palace of Justice) amongothers.

- **Want to do some shopping near the Congress venue? Galerías Pacífico is the place!** (9 min by car): if you want to do some shopping near the congress venue, Galerías Pacífico mall is the perfect choice. It was built in the 19th century, and houses not only well-known stores but also series of famous murals painted in 1945-1947 by the most outstanding Argentine painters (Antonio Berni, Lino Spilimbergo, Juan Carlos Castagnino and Demetrio Urruchúa) and the Spanish Manuel Colmeiro Guimarás.

- **Recoleta square – Recoleta Cemetery – Floralis generica**

park and arounds – Faculty of Law, Univeristy of Buenos Aires – Museum of Fine arts (Museo de Bellas Artes) (20 min by car)**:** Recoleta quarter is a very beautiful place to walk around, with many restaurants and bars, but also full of history. It is one of the most beautiful neighbourhoods in town. You can find the well-known cemetery of Recoleta where famous tombs are there (like the tomb of Evita) where you can make an interesting tour inside. If you like artwork, you can dive into the Fine Art Museum, and afterwards have a nice walk around the Floralis generic park. The Faculty of Law of the University of Buenos Aires will take your attention, famous due to its impressive architecture. Maybe want to add some shopping to this tour… yes! You can find a nice shopping mall too.

- **Palermo parks – Museum of Latin American Arts (MALBA):** Nice walks in huge, beautiful parks with lakes, with places like a Planetarium, a Japanese Park and a Botanic Garden can be found in the Palermo neighbourhood. If you want to learn about Latinoamerican Art, the MALBA museum is a must, in which famous painters like Frida Kahlo, Roberto Matta, Diego Rivera, Joaquín Torres-García, Antonio Berni, Jorge de la Vega, Tarsila do Amaral, Pedro Figari, Lygia Clark y Guillermo Kuitca can be found.
- **Tigre–Delta of Paraná River** (1 hour by car): For those who love nature, an excursion to the delta of the Paraná River, in a town called Tigre (Tiger), is worthwhile. There, you can find the Tigre Art Museum, and if it is a nice sunny day, you can enjoy a Tigre Delta Boat excursion!

Buenos Aires offers a **tourist bus** that has different routes, in which all these sites are included. Maybe, if you do not have so much time in our City, this could help to have a nice and complete overview of our *Buenos Aires Querido*. Of course, this is a snapshot of some of the most important and nice

places in Buenos Aires, but there are a lot more to do, and corners worth exploring. You can find this and more tourist information (places description, tours and different advices) in the following link: *https://turismo.buenosaires.gob.ar/en*

Hope you will enjoy BUENOS AIRES!

Andrea Monti Hughes and Andrés J. Kreiner
National Atomic Energy Commission (CNEA) / CONICET, ARGENTINA

Stay Ahead in Particle Therapy: Explore New Research from the International Journal of Particle Therapy

As we gather at this year's Annual PTCOG Conference, the *International Journal of Particle Therapy* (IJPT) is pleased to share some of its most recent research articles, which showcase exciting progress in the field.

We invite you to explore these cutting-edge studies:

- Operational Improvement of a Proton Therapy System From Reduced Energy Layer Switching Time
- Dose Constraints in Carbon-Ion Radiation Therapy to Minimise the Risk of Pectoral Myositi
- First Clinical Implementation of Step-and-Shoot Proton Arc Therapy for Head and Neck Cancer Treatment

These articles highlight innovations in treatment delivery, patient safety, and clinical implementation that are driving particle therapy forward.

To read these articles and stay updated on the latest advancements, please visit the IJPT website. If you are inspired to share your own research or clinical experience, learn more about our submission process and guidelines on the journal homepage.

Submit your paper

Find out more

Heavy Ion Centers in China

As of December 25, 2024, the WeChat public platform **“Proton China”** has summarized the progress of heavy ion radiotherapy projects in China based on publicly available online information.

According to publicly available online information, as of an incomplete statistical count, there are a total of 19 heavy ion (including combined proton and heavy ion) therapy projects in mainland China, including those in operation, under construction and proposed. Among them, 3 centers are currently operational, including the Gansu Wuwei Tumor Hospital, Lanzhou Campus (Lanzhou Heavy Ion Hospital), which announced the start of treatments in November 2024. Additionally, 12 projects are under construction, and 4 are in the planning stage. Compared to 2023, the number has increased significantly. In the Hong Kong, Macau and Taiwan regions of China, there is one operational heavy ion therapy center—the Heavy Ion Cancer Therapy Center at Taipei Veterans General Hospital, which began treating patients on May 15, 2023.

The table below presents the distribution of 19 heavy ion therapy projects in mainland China. Based on project progress, they are categorized into operational, under construction, and proposed projects. Among them, projects that have commenced construction are classified as under construction, while those

that have not yet started construction are considered proposed projects.

Distribution of the heavy ion centers in China each province and area on December 2024.

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Data Source: WeChat Public "Proton China"

"Prescribing, Recording, and Reporting Boron Neutron Capture Therapy"

An ICRU Report Committee has been constituted to address the subject of "Prescribing, Recording, and Reporting Boron Neutron Capture Therapy."

The mission of the International Commission on Radiation Units and Measurements (ICRU) is to develop and promulgate internationally accepted recommendations on radiation-related quantities and units, terminology, measurement procedures, and reference data for the safe and efficient application of ionizing radiation to medical diagnosis and therapy, radiation science and technology, and radiation protection of

individuals and populations.
The rapidly expanding number of centers administering boron neutron capture therapy (BNCT) has led the ICRU to conclude that the development of a comprehensive report detailing methodologies and guidelines for the prescription, documentation, and reporting of BNCT is imperative. This initiative aims to standardize practices, prevent the emergence of locally adapted methodologies with inconsistent outcomes, and ensure the safe and effective clinical utilization of BNCT. In July 2024, three co-chairs were nominated (Clifford Chao, Sandro Rossi, Wolfgang Sauerwein). The final appointment of the Report Committee 39 took place in January 2025. Due to the complexity of the task, a total of 11 individuals were appointed to the committee, making this the largest Report Committee in the history of the ICRU. All individuals in the field are encouraged to contact one of the committee co-chairs with suggestions and to provide support with valuable materials

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Proton Centers in China

As of December 25, 2024, the WeChat public platform **“Proton China”** has summarized the progress of proton radiotherapy projects in China based on publicly available online information.

According to incomplete statistics, there are **49 proton therapy projects** in mainland China, including those **in operation, under construction, and proposed**. A total of **35 medical institutions** have been licensed to configure proton therapy systems, distributed in the cities or area as follows:

- **North China (6 centers):** Beijing, Langfang, Zhuozhou,

Tianjin, Hohhot, Taiyuan

- **Northeast China (4 centers):** Harbin, Shenyang (2), Changchun
- **East China (9 centers):** Shanghai (2), Jinan, Zibo, Hefei, Suzhou, Hangzhou, Nanjing, Nanchang
- **Central & South China (10 centers):** Wuhan (2), Zhengzhou (2), Guangzhou (2), Shenzhen (2), Changsha, Nanning, Haikou
- **Southwest China (4 centers):** Chengdu (2), Chongqing (2)
- **Northwest China (2 centers):** Xi'an, Lanzhou

Additionally, Hong Kong, Macau, and Taiwan have 5 operational proton centers:

- **Taiwan (4 centers):** Linkou Chang Gung, Kaohsiung Chang Gung, Taipei Cancer Center (Taipei Medical University), and the Hospital Affiliated with China Medical University
- **Hong Kong (1 center):** Sanatorium & Hospital East Center

Three centers are currently under construction in Hong Kong, Macau and Taiwan:

- Cancer Medical Center, National Taiwan University Hospital
- Taichung Veterans General Hospital
- Changhua Christian Hospital

The following table provides details of the **49 proton projects in mainland China,** categorized by their current status: **in operation, under construction, and proposed**.

The distribution of the proton centers in China, by each province and area, on December 2024.

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Data Source: WeChat Public "Proton China"

CAS Ion Medical Technology Co., Ltd. (CASHIM)

CAS Ion Medical Technology Co., Ltd. (abbreviated as CASHIM) was established in 2018 by the Chinese Academy of Sciences Holdings and the Institute of Modern Physics of the Chinese Academy of Sciences. It is committed to promoting the

industrialization of ion cancer therapy technology in China and beyond.

CASHIM is headquartered in Beijing, China, where it operates its marketing and TPS/TCS R&D centers. It has strategically positioned its hardware R&D center in Hangzhou, Zhejiang Province; its heavy ion system production base in Lanzhou, Gansu Province; and its proton system production base in Shaoxing, Zhejiang Province. As the sole entity in China with the requisite qualifications and comprehensive capabilities to design, manufacture, commission, operate, and maintain heavy ion therapy systems, CASHIM has garnered the market recognition by securing nine business contracts to date. Two systems are currently in full operation, and an additional three systems are expected to commence clinical services in 2025. This outstanding achievement has established CASHIM as the global leader in the deployment of heavy ion therapy systems. Located in Wuwei, Gansu Province, the first demonstrative heavy ion therapy system project has been a resounding success over the past four years, having provided treatment services to over 1,800 patients and yielding highly favorable clinical outcomes.

Throughout the implementation of the projects, CASHIM has not only delivered qualified ion therapy systems of high performance, but also cultivated a team of exceptionally skilled R&D engineers, dedicated operations and maintenance staff, and a sophisticated project management team.

CASHIM’s main products include the Integrated Carbon Ion and Proton Therapy System, and Integrated Proton and Helium Ion Therapy System. The details are as follows:

Integrated Carbon Ion and Proton Therapy System: It is equipped with a linear injector, a synchrotron (featuring the world’s shortest circumference of 56m), and four treatment rooms. These treatment rooms are designed to meet various clinical requirements, with terminals in horizontal, vertical, 45-degree, and gantry setups. This system can flexibly use

carbon ions and protons for therapeutic applications and can also use helium (He) ions and oxygen (O) ions for clinical research. The first Integrated Carbon and Proton Ion Therapy System is scheduled for delivery in 2027.
Integrated Proton and Helium Ion Therapy System: It is equipped with a linear injector, a synchrotron, and treatment rooms designed according to clinical requirements, with horizontal and gantry setups. For treatment, this system can use protons for all suitable tumors, and carbon ions with limited energy for superficial tumors. Additionally, it can use Helium ions for research purposes.

The principal features of CASHIM's products are as follows:

– Multi-energy operation technology
The synchrotron, a key component of CASHIM's products, is equipped with advanced multi-energy operation technology. This technology enables the generation of multiple particle beams with varying energies within a single operational cycle. Consequently, it significantly enhances the utilization efficiency of the particle beam and reduces the treatment time for patients. Notably, the switching time between different energy beams can be minimized to less than 200 milliseconds, thereby optimizing the overall treatment process.

– Phoenix Plan (Treatment Planning System)
The PHOENIX Plan is a comprehensive, all-in-one software solution to streamline the entire radiation therapy planning process. It integrates all essential clinical modules, namely patient management, target delineation, plan design and optimization, plan evaluation, quality assurance, and system configuration management.
Highly versatile, the PHOENIX Plan is set to incorporate multiple particle therapy modalities, such as carbon ion and proton therapy. It also encompasses a wide range of relative biological effect (RBE) models, supports the automatic contouring of dozens of organs, and features an innovative Monte Carlo carbon ion dose calculation engine. With these

capabilities, the PHOENIX Plan is poised to set a new benchmark in treatment planning software.

– Superconducting Gantry
The gantry of CASHIM’s products is engineered using advanced curved composite superconducting magnet technology. Combined with the use of compact scanning magnets, this innovative approach enables a compact and lightweight design. As a result, the overall weight of the gantry is reduced to only 165 tons, making it the lightest heavy-ion gantry in the international market.

PTCOG 63: Advancing Excellence in Particle Therapy

Join us in Buenos Aires, Argentina, from **2–7 June 2025**, for the **63rd Annual PTCOG Conference**—the leading global forum dedicated to **particle therapy research, clinical advancements, and technological innovation.**

With an **extensive scientific program**, this year’s meeting will highlight **developments in proton, carbon-ion, and BNCT therapies**, from treatment planning to adaptive therapy, imaging, clinical trials and more.

Why Attend?

· **Gain exclusive insights** into the latest data and advancements

· **Learn the latest on** treatment efficiency, AI applications, and FLASH therapy.

· **Network with international colleagues** in a collaborative environment.

Buenos Aires: A Gateway to Discovery

Often called the "Paris of South America," Buenos Aires offers **vibrant culture, stunning architecture, and world-class gastronomy**. As a modern, well-connected city with top-tier **medical infrastructure**, it provides a **safe and engaging** environment for professional exchange and exploration. Maximize your trip by visiting Argentina's natural wonders, including **Iguazú Falls, Patagonia's glaciers, Mendoza's wine country, and Salta's breathtaking landscapes**.

Be part of the global movement advancing **particle therapy**.

Secure your place at PTCOG 63 today!