History

Since its foundation in 1928, the Institut Henri Poincaré has undergone several major changes. Its history is closely linked to that of the 20th and 21st centuries and to the development of mathematics and theoretical physics during this period. Internationally recognised, the IHP of today is faithful to its heritage. Here is a summary of its history.

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Founded and built in 1928 thanks to private patrons within the Faculty of Sciences of the University of Paris as a "centre for teaching and scientific research on mathematical and theoretical physics and related sciences, such as probability calculus", the Institut Henri Poincaré is the historical home of mathematics and theoretical physics in France.

Between the wars, the IHP welcomed the world's greatest specialists and published the texts of their conferences in its journal, the Annals of the Institut Henri Poincaré. It also hosted the first computing laboratories, whose machines were unfortunately lost during the Second World War.

After the WWII, IHP was the heart of mathematics in Paris. People flocked there to attend advanced courses and seminars, including the famous Bourbaki seminar. The building was raised by two floors, the last one being reserved for the library.

In May 1968 and in the years that followed, IHP went through a turbulent period, without legal status after the break-up of the University of Paris. An association called the Institut Henri Poincaré was formed in 1982. A handful of mathematicians and a physicist joined forces to save IHP.

The objectives are to preserve and develop the library, to found a thematic research centre like MSRI in Berkeley, and to create a place where mathematics is open to the public.

The new IHP was officially inaugurated in 1994, after restructuring the building. In 1993, the “House of Mathematics, called the Institut Henri-Poincaré” officially became a school of the Pierre and Marie Curie University. Its library and its thematic research centre, the Centre Émile Borel, are departments of IHP. The national dimension of IHP has recognised by its status as a joint service / support and research unit with the Centre National de la Recherche Scientifique since 1995.

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In 2020, the Maison Poincaré was created as a third department. The place of the same name welcoming the public will open in the Perrin building, a former physical chemistry laboratory built in 1926 and renovated to allow the extension of the Institut Henri Poincaré. The original, Borel building was also renovated - to a minor extent - between 2019 and 2021 while remaining occupied.

These development projects of the IHP are supported by its supervisory bodies, the CNRS and Sorbonne Université, by the IHP Endowment Fund, created in 2016 to raise private funds, and by the association of the Publications of the Institut Henri Poincaré (created in 1999 from that of 1982), as well as by the city of Paris, the Île de France region and the French State.

Major periods of IHP
Read about it in the drop-down blocks below.

Origins

The Institut Henri Poincaré was inaugurated on 17 November 1928 in the presence of various scientific and political personalities, including Raymond Poincaré, President of the Council, Pierre Marraud, Minister of Public Instruction and Fine Arts, and Charles Maurain, Dean of the Faculty of Science of the University of Paris.

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The IHP occupies a purpose-built building, just opposite Jean Perrin's physical chemistry laboratory, which adjoins the Institut Curie, and next to the future Institute of Physical and Chemical Biology. Its first director was the mathematician Émile Borel, surrounded by a management committee including the physicists Jean Perrin and Paul Langevin.

Solicited by Georges Birkhoff on behalf of the International Education Board of the Rockefeller Foundation 'on the most effective way in which this admirable institution could help French science', in the words of his inaugural speech, Émile Borel had the idea of founding the institute and "placing it under the patronage of the name of Henri Poincaré", his illustrious predecessor (before Joseph Boussinesq) in the chair of probability calculus and mathematical physics at the Faculty of Science, "the great scientist who honoured French science for so many years". The project was launched with the support of Edmond de Rothschild in addition to American donors.

The IHP brings together the chair of probability calculus and mathematical physics, held by Émile Borel, and the chair of physical theories, created especially for the institute and whose first holder was Léon Brillouin. They were joined by lecturers, Maurice Fréchet and Louis de Broglie respectively. The latter became the holder of the chair in 1932, and was then replaced by Francis Perrin as lecturer. Fréchet's successor was Georges Darmois. Émile Borel remained in the chair until his retirement in 1941.

As soon as IHP was created, Émile Borel hired Jeanne Lattès, née Ferrier - who became Jeanne Fournier after her second marriage - as an "assistant in probabilities calculus". A doctor in physics, she had been working in Marie Curie's neighbouring laboratory until then and had to leave it for health reasons. She remained at IHP until her retirement in 1958.

On the advice of the management committee, Émile Borel and Jeanne Fournier invited the greatest specialists of the time in analysis, probability, mathematical physics and theory: Léon Bloch, George Birkhoff, Max Born, Marcel Brillouin, Francesco P. Cantelli, Torsten Carleman, Charles G. Darwin, Paul Dirac, Theophile de Donder, Albert Einstein, Enrico Fermi, Vladimir A. Kostitzine, Paul Lévy, George Pólya, Erwin Schrödinger, Vito Volterra, etc. Their series of lectures and conferences were published in the Annales de l'Institut Henri Poincaré, probably sometimes based on notes taken by Jeanne Fournier. Some scientists were prevented from honouring their invitation for political reasons, despite the intervention of the Ministry of Public Instruction. This is the case in particular of Sergej Bernštejn, Andrej N. Kolmogorov and Jacov I. Frenkel. Kolmogorov nevertheless visited IHP in 1958.

The IHP is at the forefront of the development of probability theory through the international exchanges it generates and the resulting intellectual effervescence. It also contributes to the emergence of new fields of mathematical applications such as population dynamics.

It also hosted the first modern mathematics seminars, in particular the seminar of Gaston Julia. The very young Nicolas Bourbaki group met regularly at IHP. Theoretical physics also held its seminar at IHP behind de Broglie.

The first computing laboratories were set up within IHP. In 1939, IHP hired a dozen calculators to support the war effort. Their machines were evacuated and finally lost during the 1940 debacle.

**Post-war period**

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After the defeat of 1940, the institute's activities did not stop, even though Borel was arrested by the Gestapo and imprisoned in Fresnes in October-November 1941.

With Georges Valiron they founded a computing laboratory in 1940. In 1942, Fréchet succeeded Valiron at the head of this " computation and statistics laboratory ", alongside the " experimental and graphic computation laboratory " of Joseph Pérès and the " mechanical computation laboratory " of Louis Couffignal. All of them had projects for new calculation machines, using different technologies, which would lead to dead ends.

Couffignal's laboratory was transferred to the Institut Blaise Pascal, founded by the CNRS in 1946 (the year of the success of the ENIAC machine in the United States) and housed at IHP until the late 1950s. Couffignal's machine was a failure. In 1957, IHP bought one of the first Bull electronic calculators for its digital computing laboratory, directed by René de Possel.

The building also houses the Institut de statistique de l'Université de Paris (ISUP), founded in 1922 by Borel, who was succeeded as director by Georges Darmois. ISUP was relocated in the 1960s but still exists, under the name of Institut de statistique de Sorbonne Université, while having kept its acronym.

On the physics side, a chair of "quantum physics and relativity" was launched in 1947 thanks to a bequest. Its first holder was Paul Soleillet. As for the chair of physical theories, it was occupied by de Broglie until his retirement in 1962.

Borel officially retired in September 1941 but continued to act as the IHP director until his death in 1956. Paul Montel, until then deputy director, succeeded him at the age of 80!

Paul Belgodère, a mathematician and library curator, was appointed CNRS research engineer in charge of the library in 1949. At the same time, Denise Lardeux became the interellant of the IHP and ran the "Mathematical Secretariat", which "ensured the material management of the building, the mathematical multigraphy and a general secretariat for Mathematics".

Belgodère and Lardeux organise and publish the proceedings of numerous seminars held at IHP: algebra and number theory (Dubreil), analysis (Choquet and Lelong), probability calculus (Darmois), cybernetics, econometrics (Roy), partial differential equations (Schwartz), theory of valuated fields (Krasner), history of mathematics (Fréchet and Taton), logic (Destouches), wave physics and group theory (Kahan), operational research (Guilbaud), physical theories (de Broglie, who will continue after the disappearance of the Proca seminar), aerodynamics (Pérès), aerothermics (Brun), plus the "Grand séminaire de Mathématique" (Bourbaki) three times a year, the Sophus Lie seminar, and the one on algebraic geometry (Cartan) which takes place at the École normale supérieure.

Among the schools that developed at the IHP were those of probability and logic, with repeated invitations of Michel Loève and Georges Kreisel.

The 1950s and 1960s were thus an important period for IHP. "Until the creation of Jussieu, the place where people came for mathematics at the doctoral level, whether to attend seminars or to attend postgraduate courses, was IHP." (Bernard Teissier 2010)

The " tea for mathematicians " instituted in 1953 by Henri Cartan and André Weil was organised by Denise Lardeux every Wednesday in the basement of the institute, for " professors and students wishing to free themselves for a while from the constraints of rigorous work ". This tradition continued until the end of the 1970s.

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In view of the success of all these activities and the difficulty of accommodating the large number of visitors, IHP was granted authorisation and funds to enlarge the building. In 1954, it was raised by two floors. This allowed the library, which was cramped on the first floor, to occupy the entire surface area of the fourth floor.

The elevation work was the subject of an agreement in 1951 between IHP, the Faculty of Sciences of the University of Paris and the CNRS, which financed the project to the extent of 50 million francs, with the support of the Direction de l'enseignement supérieur.

Refoundation

In 1968, Paul Montel was still director of IHP and remained so until his death in 1975, at the age of 98! Paul Belgodère, who was in charge of the library, was also the secretary general of the institute, which he held firmly in his hands during the events of May.

It was not so much the political unrest within the walls of IHP that marked a break with the past, but the Faure Law of 12 November 1968, which confirmed the break-up of the University of Paris and consequently the disappearance of the Faculty of Sciences, of which the IHP was a part. The institute thus lost its legal existence and its operating resources.

In the 1970s and 1980s, the building was administered by the Chancellery of the Universities of Paris and its use became dispersed. Many mathematicians joined the new campuses of Jussieu and Orsay, with the notable exception of René Deheuvels, Pierre Lelong, Paul Malliavin and Charles Pisot. The latter succeeded Montel as director of IHP, despite its lack of status. As far as theoretical physics was concerned, Jean-Pierre Vigier kept a team at IHP after having been an assistant to de Broglie.

Following its (stormy) creation in 1971 by Jean Teillac - Frédéric Joliot-Curie's successor at the Collège de France and the Radium Institute -, the National Institute of Nuclear and Particle Physics (IN2P3) moved into IHP until 1981. In return, IN2P3 financed new spaces at its own expense: the first floor was enlarged by 300 m², inside the U-shape of the building (this is where the reading room and the mezzanine offices of the current library come from).

At the end of the 1970s, the main occupants of the IHP were the École pratique des hautes études (EPHE), the Institut de sciences mathématiques et économiques appliquées (ISMEA), and the École des hautes études en sciences sociales (EHESS), with its Centre d'études nord-américaines and its Centre de recherches sur le Japon, which no longer had anything to do with the scope of IHP.

When Paul Belgodère retired late February 1986, Denise Lardeux had been retired for many years but continued to work as a full-time volunteer for the library. Hélène Nocton arrived in 1987 as the new head of the library. Her first impression was not very encouraging: "For someone of my generation, IHP was a symbol of the indifference of mathematicians to material matters. It was a completely dilapidated institute, whose management was done in a haphazard way, which had sunk into a kind of administrative mania...".

However, a few of them are mobilising to save IHP. This began in 1982 with the creation of an association under the law of 1901 by Jean-Pierre Aubin, following a mission entrusted to him by the Director of Research of the Ministry of National Education. Named "Institut Henri Poincaré", this association gave it a legal status. It involved representatives of the Research Directorate, the Academy of Sciences, the Collège de France, the CNRS, SMF, CIMPA, CIRM etc.

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A few years later, the association was taken over by Nicole El Karoui, who, together with Bernard Teissier, was also entrusted with a CNRS service unit project, mainly focused on the IHP library. The physicist Bernard Julia is at their side to revive IHP. In practice, Hélène Nocton and her colleague Dominique Dartron were busy not only developing the library (this was the time of the transition from card indexes to computers) but also organising seminars.

At the end of 1988, Michel Demazure was asked by Lionel Jospin, Minister of National Education, Youth and Sports, to produce a report on the situation of mathematics in France and of IHP in particular. A 'public interest grouping' (GIP) was envisaged. In the end, the status of an internal school of the University of Paris VI, as defined by the Education Code, was chosen. It was made official by decree on 28 February 1990.

Demazure also obtained from the Ministry some twenty million francs to reorganise the "house of mathematics called the Institut Henri-Poincaré" around three ideas: to safeguard and develop the library, to create a research centre with annual themes (as imagined by El Karouï and Teissier, on the model of MSRI at Berkeley), and to create a place for opening mathematics to the public. Major work was undertaken. The project was entrusted to Pierre Grisvard, who became director of IHP in 1990, until his untimely death in 1994.

The official rebirth of the IHP took place in 1994 with new protagonists. Joseph Oesterlé succeeded Grisvard as director and, at the inauguration of the renovated and restructured building (the library having been moved back to the first floor), the ribbon was cut by the then Minister for Higher Education and Research, François Fillon.

In particular, it was the birth of the thematic research centre called Centre Émile Borel. It organised its first thematic programme from February to July 1994 with François Laudenbach and Claude Viterbo on symplectic geometry. The thematic quarters selected by the IHP’s Scientific Advisory Board have followed one another since then.

IHP acquired a second status on 1 January 1995, reminiscent of the project entrusted to El Karouï and Teissier: that of a joint service unit between the CNRS and the Pierre and Marie Curie University. Since that date, the director of IHP has been appointed jointly by the Minister of Higher Education (for the school status) and the President of the CNRS.

In 1999, the new director of IHP, Michel Broué, had the association renamed "Institut Henri Poincaré" to "Publications de l’Institut Henri Poincaré" and redefined its purpose: "to develop, animate and coordinate publishing activities in mathematics and physics and to support the development of the Institut Henri Poincaré". The association now focuses on the Annales de l’Institut Henri Poincaré.

The 20th anniversary of the refoundation of IHP was celebrated on 17 October 2014 by its director since 2009, Cédric Villani, and his deputy director, Jean-Philippe Uzan, in the presence of many of the actors and witnesses of that era.

Finally, let us mention the deputy directors who succeeded each other, somewhat in the shadow of the directors, between 1994 and 2014:

- Bertrand Duplantier from 1994 to 1999
- Alain Comtet from 2000 to 2009
- Jorge Kurchan from 2010 to 2013
- Jean-Philippe Uzan from 2013 to 2017

Expansion
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As soon as he became director of IHP in 2009, Cédric Villani obtained substantial additional resources from the CNRS. In fact, the CNRS Institute for Mathematical Sciences and their Interactions devotes a large part of its budget to supporting the activities of the national and international communities through IHP and CIRM.

Villani also joined forces with his counterparts at CIRM, Patrick Foulon, CIMPA, Claude Cibils and IHÉS, Jean-Pierre Bourguignon, to set up a "laboratory of excellence" project as part of the "Investments for the Future" programme launched by the French government. Thus, in 2011, the LabEx CARMIN was created to provide each of the four partners with resources "up to international standards" and to carry out joint projects, including the carmin.tv platform. CARMIN is renewed for the period 2020-2024 under the responsibility of Sylvie Benzoni.

Villani also succeeded in convincing the Clay Mathematics Institute to establish a 'Poincaré chair' at IHP, following Grigori Perelman's refusal to receive his prize for the proof of the Poincaré conjecture.

These changes in the size of the institute are accompanied by a reinforcement of the administrative team of the IHP, composed of permanent or contractual CNRS or UPMC (Sorbonne Université since 2018) staff, some of whom are on CARMIN resources.

The IHP hosts and develops partnerships with numerous associations and learned societies (including the Société Mathématique de France, a historical partner), as well as the Fondation Sciences Mathématiques de Paris. The pressure on office space was growing.

Villani then obtained from the Pierre and Marie Curie University the reallocation of the Perrin building (physical chemistry laboratory) to IHP as part of a vast project for a mathematics centre open to the public: Demazure's third idea! This idea began to be implemented in 2014, with numerous initiatives to open IHP to the general public, schoolchildren, companies and society in general.

This project, known as IHP+, is supported by a Circle of Partner Companies, the precursor of the IHP Endowment Fund founded in 2016, and is made possible by the 2015-2020 State-Region Plan Contract (CPER). Also in 2016, a project manager, Marion Liewig, was hired by the CNRS for IHP.

The IHP+ project is financed under the CPER by the CNRS, the Île de France region, the city of Paris and the State. The latter will top up the budget in 2020 as part of the recovery plan following the Covid-19 crisis.

When Villani resigned in 2017 to enter politics, the architectural competition for the rehabilitation of the Perrin building had barely ended. Its follow-up was taken over by the interim director of the IHP, Patrice Le Calvez, and then by the director Sylvie Benzoni from 2018.

The project management is awarded to Atelier Novembre, associated with the company Du&Ma for the scenography of the museum space planned on the ground floor of the Perrin building. The owner, Sorbonne Université (resulting from the merger of the Université Pierre et Marie Curie with the Université Paris-Sorbonne on 1 January 2018), is the project manager and has delegated this responsibility to EPAURIF.

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A foundation stone ceremony for the Perrin building takes place on 14 November 2018. It is also the 90th anniversary of the IHP. On this occasion, the frieze visible below was made. It shows the successive directors, thinking then that Belgodère directed IHP from 1949 to 1986. It was the work of Alexis Servoin, a student at EHESS, that enabled the history to be refined.

The first works on the Perrin building concern the "cleaning" of the traces of the experimental laboratories that it housed. This work is completed in 2019. The actual rehabilitation work starts in 2021 and finish in 2022.

The CPER also made it possible to finance the renovation and upgrading of the Borel building to meet accessibility standards for people with disabilities. This long-delayed work, for which the project management was entrusted to Walid Ghanem, was spread out between 2019 and 2021, as the building remained occupied during this time.

The name chosen for the museum space (exhibitions and outreach) in the Perrin building is the Maison Poincaré. From the point of view of the internal organisation of IHP, the Maison Poincaré became a third department in 2020, alongside the library and the Centre Émile Borel.

The design of the museographic programme was carried out between 2018 and 2021 in interaction between Du&Ma, the museographer Céline Nadal (MuseoScience), IHP and a certain number of its partners: companies but also teachers, researchers, science communicators, etc.

Finally, let us mention the deputy directors who have been accompanying IHP's major projects since 2018:

- Rémi Monasson, from March 2018 to December 2020
- Dominique Mouhanna, since May 2021

**Major projects and key dates**

To be found in the drop-down blocks below.

**Key dates of the Institut Henri Poincaré**

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17 novembre 1928 : inauguration par Émile Borel de l'IHP dans un bâtiment construit en face du laboratoire de chimie physique de Jean Perrin (architectes respectifs : Gustave Rolet et Henri-Paul Nénot), sur financement par l'International Education Board de la Fondation Rockefeller, complété par Edmond de Rothschild.

1er décembre 1930 : approbation des statuts de l'IHP par le Conseil de l'Université de Paris comme « centre d'enseignement et de recherches scientifiques sur la physique mathématique et théorique et les sciences connexes, telles que le calcul des probabilités » au sein de la Faculté des sciences.


5 décembre 1951 : convention entre la Faculté des Sciences, l'IHP et le CNRS.


17 mai 1954 : inauguration du bâtiment surélevé, à l'occasion du centenaire de Poincaré.

1973 : extension du 1er étage (financement IN2P3, architecte ?).

22 décembre 1981 : rapport de la Chancellerie des Universités sur la situation de l'IHP.

4 mars 1982 : création d'une association loi 1901 intitulée « Institut Henri Poincaré » par Jean-Pierre Aubin avec « pour but de développer, animer et coordonner les activités de communication des mathématiciens, entre eux et avec l'extérieur ».

19 novembre 1988 : rapport de Michel Demazure à Lionel Jospin, ministre de l'éducation nationale, de la jeunesse et des sports, sur les mathématiques en général et l'IHP en particulier.


11 février 1993 : approbation des statuts de l'IHP par le Conseil d'administration de l'Université Pierre et Marie Curie.


1er janvier 1995 : création d'une unité mixte de service CNRS-UPMC, l'IHP devient UMS 839.


2014 : lancement du projet d'extension de l'IHP au bâtiment Perrin.

26 avril 2016 : création du Fonds de dotation de l'IHP, présidé par le directeur de l'IHP Cédric Villani.

14 novembre 2018 : première pierre des travaux sur le bâtiment Perrin.

1er janvier 2019 : renouvellement de l'IHP comme UMS 839, sous la direction de Sylvie Benzoni.


2020 : création de la Maison Poincaré comme 3ème département de l'IHP.
Key dates of the physical chemistry laboratory / Perrin building

- **1922-1926**: construction du bâtiment, sur demande conjointe de Jean Perrin et de Marie Curie (architecte Henri-Paul Nénot, financement obtenu sur intervention de Léon Blum).
- **1926**: inauguration du Laboratoire de chimie-physique, qui sera dirigé par Jean Perrin quasiment jusqu'à sa mort en 1942.
- **1927**: achèvement des laboratoires, après demande de crédits supplémentaires adressée au président du Conseil, Raymond Poincaré.
- **1937-1938**: annexion des loggias et construction du « grand laboratoire » (architecte Germain Debré, financement obtenu de la Caisse nationale de recherche scientifique par Jean Perrin). Yvette Cauchois installera dans le grand laboratoire (surélévation cubique de 10m) un accélérateur vertical, avec le soutien du Service technique de l’aéronautique.
- **1941-1945**: le laboratoire est dirigé par Louis Dunoyer.
- **1945 -1953**: le laboratoire est dirigé Edmond Bauer.
- **1953 - 1979**: le laboratoire est dirigé par Yvette Cauchois.
- **1980 - 1991**: le laboratoire est dirigé par Christiane Bonnelle.
- **1992 - 2004**: le laboratoire est dirigé par Alfred Maquet.
- **1er janvier 1997**: création de l’unité mixte de recherche CNRS-UPMC UMR 7614 sous le nom de laboratoire de chimie physique - matière et rayonnement (LCPMR).
- **2016**: le LCPMR déménage à Jussieu.

Call for feedback

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INSTITUT HENRI POINCARÉ
Sorbonne Université / CNRS
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TIMETABLE
The institute:
• Monday to Friday from 8:30am to 6pm,
• closed on public holidays.

The museum - Maison Poincaré:
• Monday, Tuesday, Thursday and Friday from 9:30am to 5:30pm,
• Saturday from 10am to 6pm,
• closed on Wednesday and Sunday.

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