



First steps towards
An IphU Doctoral program
Coordination with the doctoral school (ED352)
Building an IphU community

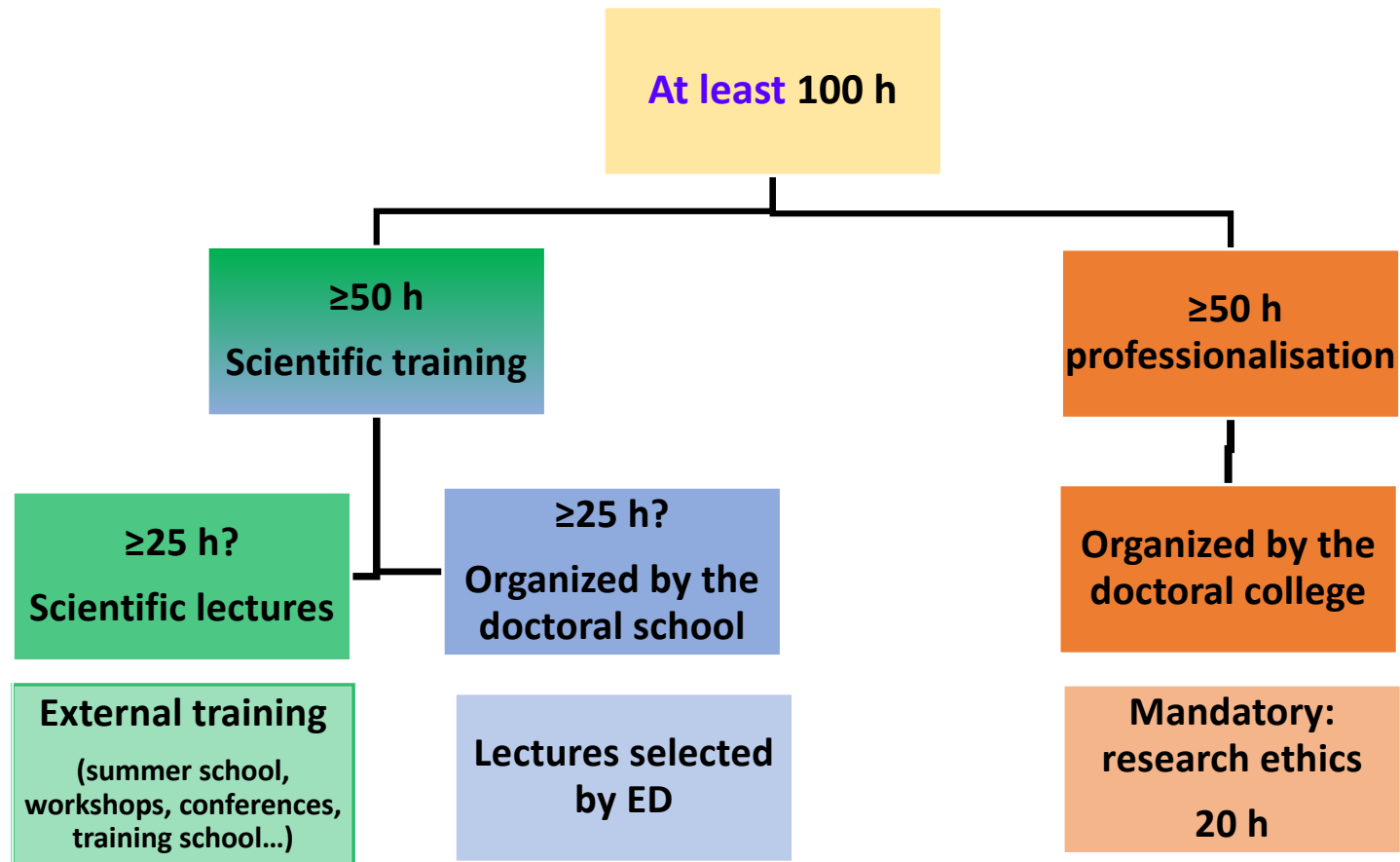
- Summer schools
- Tutoring master students
- Teaching/outreach (OCEVU/IphU platforms, projects)*
- Doctoral lectures: training program

IphU and ISFIN: pilot institutes for ED352
IphU is the only linked to a single ED

Perimeter of the IphU doctoral program

- Very few PhD students funded by IphU
- Many other students working on IphU topics in our laboratories
- Possible way to proceed (likely to be proposed by the ED):
 1. Every year the ED sends the list of the new PhD students to IphU
 2. IphU doctoral board selects the IphU PhD students
 3. The IphU doctoral program established by IphU/ED applied to them (ADUM registration as IphU student)

Training program of an AMU PhD student



Actions and Events to strengthen the IphU membership

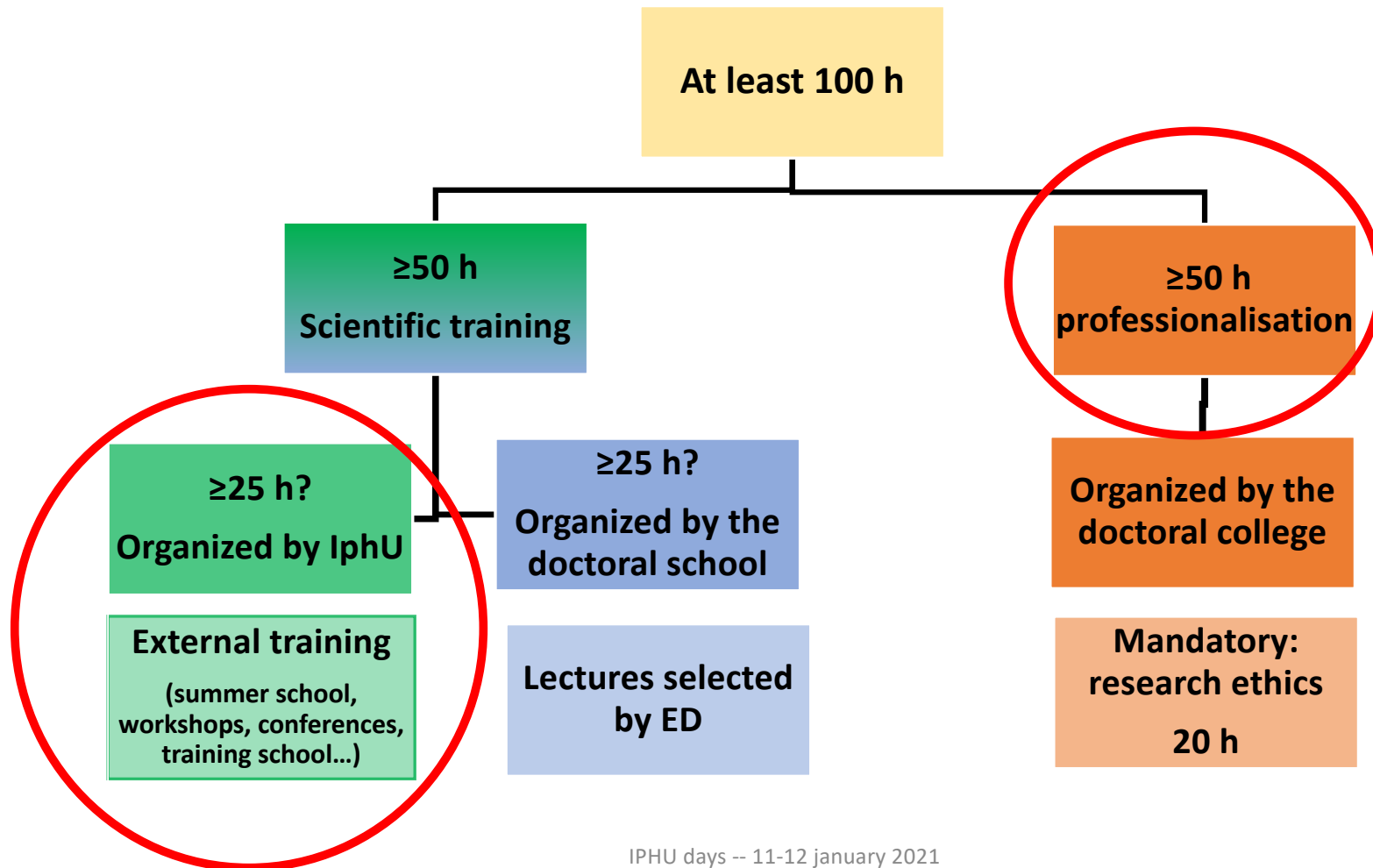
- **Summer (Winter?) Schools:**

With IphU & AMU students and post-docs (master+PhD+post docs attendees?)

+ external participants (CIVIS, others)?

- **Pairing IphU/PhD and IphU/master students:** tutoring, scientific watch, mini-workshop (cf Serge's presentation)
- **IphU PhD training course program**

Training program over the 3 years of the PhD contract



Before IphU : lectures program on IphU topics before 2021

- Every year ED352 funds ~80 hours for the PhD program (physics department)
- OSU Pytheas usually funds ≥ 1 course on LAM topics

→ Typically ~3 10h-courses per year

- OCEVU program of lectures (3 editions, 2016-2017-2018)

Doctoral program: 2019-2020

Intitulé du module de formation	Prénom et nom de l'enseignant-chercheur	Unité de recherche de rattachement	Département de formation	Nombre d'heures ETD retenues
Introduction to quantum gravity	Carlo Rovelli	CPT	Physique	15
Black Hole Physics	Alejandro Perez	CPT	Physique	15
Computational photonics: modeling light propagation in complex structures	Gilles Renversez	Fresnel	Physique	15
Optical microscopy, nanoscopy, and bio-imaging	Julien Duboisset	Fresnel	Physique	10
Structure et chimie des matériaux	Khalid Hoummada	IM2NP	Physique	15
Line broadening in plasmas	FERRI Sandrine	PIIM	Physique	10
			Total	80
Mise en œuvre expérimentale des lasers	Laurent GALLAIS	Fresnel	ECM	10
Introduction to Quantum Optics and Quantum Information.	Thomas Durt	Fresnel	ECM	12
			total	22
Large Surveys, Big Data, Generous Statistics	Matthew Pieri	LAM	OSU Pythéas	15
From accretion disks to protoplanetary disks	Pierre BARGE	LAM	OSU Pythéas	10
Formation and evolution of galaxies inside large structures	Matthieu BETHERMIN et Sylvain de la Torre	LAM	OSU Pythéas	15
			total	40

Doctoral program: 2020-2021

Intitulé du module de formation	Prénom et nom de l'enseignant-chercheur	Unité de recherche	Département de formation	HETD
Physique de l'IRM	Stanislas Rapacchi	CRMBM	?	11
	Sylviane Confort-Gouny	CRMBM	?	
	Ludovic de Rochefort	CRMBM	?	
	Olivier Girard	CRMBM	?	
	Guillaume Duhamel	CRMBM	?	
Nano-Biophotonics	Julien DUBOISSET	Fresnel	Physique	16,5
	Jérôme WENGER	Fresnel	CNRS	
	Guillaume BAFFOU	Fresnel	CNRS	
	Thmoas CHAIGNE	Fresnel	CNRS	
	Julien SAVATIER	Fresnel	CNRS	
	Manos MAVRAKIS	Fresnel	CNRS	
	Loïc LE GOFF	Fresnel	CNRS	
	Hervé RIGNEAULT	Fresnel	CNRS	
Modern Density-Functional Theory Applied to Solids and Nanostructures: Structural, Electronic and Optical Properties	Hans-Christian WEISSKER	CINaM	CNRS	15
	Andrs SAUL	CINaM	CNRS	
Quantum magnetism and spintronics	Lisa MICHEZ	CINaM	Polytech	15
	Aurélien MANCHON	CINaM	Physique	
	Andres SAUL	CINaM	CNRS	
Internet des objets et réseaux de télécommunications	Ali KHALIGALI	Fresnel	ECM	15
L'ingénierie des nanomatériaux pour la nanomédecine et l'ingénierie tissulaire	Ahnmet AL KHATTAN	LP3	Physique	6
Magic of Euclidean Path Integral	Frederico PIAZZA	CPT	Physique	10
Advanced GR and black hole physics	Alejandro PEREZ	CPT	Physique	10
Détection de rayonnements nucléaires : principes physiques et applications	Abdallah LYOUSSE	CEA	INSTN	12
Total				115,5

IPHU days -- 11-12 january 2021

+ C Schimd, advanced cosmology (OSU))?

Before IphU (cont'd)

OCEVU program of lectures (3 editions, 2016-2017-2018):

- A total of 30 h: 3 courses on galaxies & cosmology/theoretical physics/(astro)particles
- New lectures every year, voluntary participation
- Shared between Marseille, Toulouse and Montpellier
- Teachers motivated
- Mainly (exclusively?) PhD students very close to the topic
- For some lectures very low attendance, cancellation of one course

IphU lectures program

- Yearly program with a fixed number of hours
- No duplication with the ED program
- Open questions:
 - ✓ How many hours?
 - ✓ Same program every year?
 - ✓ Transdisciplinary and/or specialized lectures?

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 - ✓ Transdisciplinary and/or specialized lectures?
A minimum number of attendees is needed \rightarrow not too specialized, introductory lectures?
Professionally oriented lectures in complement to the ones proposed by the doctoral college?

Concluding remarks

- We are in the early stages of construction of a dedicated the IphU PhD program
 - The IphU community can/must be reinforced through this program
 - Link master/PhD students through different actions
 - Dedicated IphU training lectures program
- To further increase the PhD program above the (minimum of) 100 hours