

## GRAL call for candidates

### Advanced Master in "Biotechnology & Pharmaceutical Management" at Grenoble Ecole de Management<sup>1</sup>

In the framework of the Labex GRAL, a call for candidates is launched to offer **one scholarship to a GRAL PhD student every year to follow the Advanced Master Program in Biotechnology and Pharmaceutical Management at Grenoble Ecole de management.**

**The GRAL scholarship covers the full cost of the Master program.**

#### Description of the Advanced Master Program

- **3 year program, starting in October 2012**
- **Cost of the program : 15 000€ (covered by GRAL scholarship)**

Since the specificity and complexity of life sciences environment require both managerial and scientific skills, we believe that a PhD graduate with an expertise in management will be able to analyse and appreciate the relationships between technology and productivity along the value chain of the organization within a context of a dynamic environment. The *Advanced Master "Biotechnology and Pharmaceutical Management"* program is designed to provide a strong background in business concepts to students in biological sciences. As such, PhD/AM graduates will be prepared to challenge the conventional assumptions and paradigms while actively seeking new technologies and strategies to strengthen the value creating and competitive processes within their organizations. Thanks to the skills acquired in management, PhD graduates will be able to value R&D projects, identify licensing opportunities and negotiate partnerships with prospective industrial partners. In the process, the student comes to realize that value is created through the complex interactions of organizational purpose, scientific process, and people leadership.

*More details on the Advanced Master Program in the following pages*

#### Eligibility criteria

This call for candidates is open to **all PhD students of the three GRAL partner institutes, UVHCI, IBS and iRTSV, starting their PhDs in fall 2012.**

#### Selection process

- Deadline for application : CV and letter of application to be sent before the 21<sup>st</sup> of September to Adrienne Pervès ([adrienne.perves@cea.fr](mailto:adrienne.perves@cea.fr) / 04 38 78 25 92)
- Interviews at GEM to be scheduled the last week of September / first week of October

<sup>1</sup> Grenoble Ecole de Management (GEM or Grenoble Graduate School of Business) offers national and international programs from the undergraduate to the doctoral level for students and executives (1300 students). Grenoble Graduate School of Business's *Master in International Business* (MIB) has been ranked 5<sup>th</sup> Best Master in Management in the world by the *Financial Times* (20<sup>th</sup> September 2010).



# Fast Track to Success



## Complete an Advanced Master in “Biotechnology & Pharmaceutical Management” while pursuing your PhD in Biological Sciences

Dual degrees :  
leadership roles in non-traditional MBA careers,  
increased job options  
and greater leverage  
when negotiating for  
salary and promotions

Having a dual degree is  
proof of intellectual  
curiosity and indicative  
of a candidate's high  
academic calibre

The business world is  
looking for leaders with  
multiple skills and deep  
knowledge in a technical  
area

It is becoming more and more difficult for PhD graduates to find a job corresponding to their qualifications. In such a context, students who want to combine their scientific knowledge with entrepreneurial skills and business knowledge to launch a career are the ideal candidates for this PhD/Advanced Master program. The PhD/AM dual degree prepares future graduates for competitive careers and leadership roles in major health organizations, pharmaceutical companies, biotechnology firms, government organizations and other health-related businesses. Also, for those with very specific career goals, the dual degree may present benefits that a MBA degree does not provide.

Also, in today's technology enhanced marketplace, venture capital firms, investment banks and consulting firms are desperately seeking candidates with dual expertise. They judge them on their knowledge of a scientific field as well as for their business skills. As such a dual degree prepares PhD graduates for success as they have chance to explore novel opportunities by building on their technical background.

Moreover, the public sector employers also see dual degrees as a plus. In effect, in a context where government funding due to budgetary concerns is decreasing continuously scientists are required more and more to secure external funding for their research. Thanks to the skills that they will be able acquiring in management dual degree graduates will be in a position to value R&D projects, identify licensing opportunities and negotiate partnerships with prospective industrial partners.

The specificity and complexity of the life sciences environment require both managerial and scientific skills. It is these skills that the dual degree PhD in Biological Sciences and Advanced Master “Biotechnology & Pharmaceutical Management” seeks to develop and foster. Located in the heart of the French Silicon Valley, Grenoble Ecole de Management (GEM) also known as Grenoble Graduate School of Business (GGSB) outside France, has built its reputation through the education of some of the world's most creative, talented and ambitious individuals for the nano/biotechnology and high technology industries.

A dual degree graduate will be able to analyze and appreciate the relationships between technology and productivity along the value chain of the organization within a context of dynamic and uncertain environment. In the process, the student comes to realize that value is created through the complex interactions of organizational purpose, scientific process, and people leadership.

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Management  
Technology &  
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A unique blend of participants, highly customized programs and highly experienced educators .

Earn two degrees in less time than it would take to complete them sequentially and experience two complementary intellectual cultures.

## Program background

GEM has been offering its Advanced Master program ‘Biotechnology & Pharmaceutical Management’ since 2002. Since its inception, the school has offered an industry focused program that truly is interdisciplinary in nature. The program was designed to respond to the growing need for professionals who are trained in life sciences management. The curriculum includes essential skills for the successful manager and an introduction into the body of knowledge that is unique to the life sciences industry. The goal of the program is to train a highly qualified workforce capable of analyzing and appreciating the relationships between technology and productivity along the value chain of the organization and master the complex interactions of organizational purpose, scientific process, and people leadership that generates competitive advantage.

GEM has on going collaborations with the Department of Biological Sciences of numerous universities both nationally and internationally. Since many students with a PhD in Biological Sciences are interested in pursuing careers in industrial science, GEM has developed a PhD in Biological Sciences/Advanced Master “Biotechnology & Pharmaceutical Management” dual degree.

With an international and sector perspective in mind, GEM has brought together its experience in business education in the biotechnology and high technology fields, the practical expertise and cutting-edge research of its leading faculty and the most recent economic case studies to develop a highly industry focused , innovative dual degree program. The program has been developed to provide students with the knowledge and practical skills necessary to deal with an ever changing and uncertain environment.

GEM's program is intensive, demanding and designed for the people that aspire to achieve advanced managerial positions requiring multidisciplinary skills within the biotechnology industry. The focus of our program is on the integration of a number of individual managerial and technical elements into an integrated whole to create competitive advantage.

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GRENOBLE ECOLE DE MANAGEMENT  
 12, rue Pierre Sémard - BP 127 - 38003 Grenoble Cedex 01 - France  
 Tél. : +33 4 76 70 60 60 - Fax : +33 4 76 70 60 99  
 E-mail : info@grenoble-em.com - www.grenoble-em.com



The combination of a PhD degree and an industry focused Advanced Master degree presents a wider range of career opportunities at a senior level.

## Benefits of GEM's dual degree

- **Convenience:** The dual degree program saves money as well as time compared to the cost of pursuing the chosen two degrees separately. The program has been designed so that students can study and manage their own way. Furthermore, students will be able to utilize the school's online study platform as a suitable mode of study in order to maintain a flexible approach where students can combine on-line and on campus learning whilst pursuing their PhDs.
- **Flexibility:** At GEM, dual degree opportunities are not limited to formal programs. Students can create a tailored dual degree program in practically any scientific PhD discipline offered at a different university.
- **Timely Completion of Degree:** Dual degrees are designed to allow students to complete both the Advanced Master degree and another graduate degree simultaneously, usually in less time than completing the two degrees separately. By following the on-site schedule, students can complete GEM's Advanced Master degree in about 36 months.
- **Competitive Advantage:** This unique dual qualification offers the fastest way to gain a professional and academic qualification bringing together academic knowledge and practical skills which are highly valued in the business world. Once students complete the dual degree program, they will be able to speak the same language as senior managers, bankers, investors and consultants.
- **Career Opportunities:** The dual degree program offers students the possibility to embrace novel career opportunities by being able to understand the complex relationships among science, technology, financial resources and customer value. In effect, graduates will enjoy multidisciplinary expertise with a biotechnology/pharmaceutical sector knowledge allowing them to succeed in any role.
- **Academic excellence:** Few schools can match the breadth of excellence that GEM is able to offer students who want to study across disciplines. GEM is one of the few business schools to possess the three accreditations that distinguish the leading international business schools: [EQUIS](#) (European Quality Improvement System), [AACSB](#) (The Association to Advance Collegiate Schools of Business) and [AMBA](#) (The Association of MBAs). Furthermore, GEM regularly appears in the **Financial Times ranking of top Business Schools for its MBA and Masters programs.**

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GRENOBLE ECOLE DE MANAGEMENT  
12, rue Pierre Sémard - BP 127 - 38003 Grenoble Cedex 01 - France  
Tél. : +33 4 76 70 60 60 - Fax : +33 4 76 70 60 99  
E-mail : [info@grenoble-em.com](mailto:info@grenoble-em.com) - [www.grenoble-em.com](http://www.grenoble-em.com)



## Curriculum

The program is designed to provide a strong foundation in business concepts to students in biological sciences. Students will develop not only the skills they need to effectively manage in technologically complex workplaces, but also the vision to becoming leaders in their fields.

As such, dual degree graduates should be prepared to challenge the conventional assumptions and paradigms while actively seeking new technologies and strategies to strengthen the value creating and competitive processes within their organizations. The dual degree program combines the required courses for the PhD in Biological Sciences with the additional required courses of the Advanced Master program. The Advanced Master program requires a total of 75 ECTS units of which core and required courses account for 45 ECTS and the remaining 30 ECTS units are granted for the dissertation of the professional thesis. Students will take 6 required graduate management core courses the first year, and the remaining 14 modules over the next two years. The professional thesis can be completed either in year 2 or 3. GEM's dual degree program requires full-time attendance. The modules of the Advanced Master program "Biotechnology & Pharmaceutical Management" will be given every year following a predefined schedule as highlighted in the below table either during the 1<sup>st</sup> or 2<sup>nd</sup> semester. This will provide students with the necessary visibility and flexibility to complete the course work over three years by taking into consideration their schedule constraints.

Advanced Master program "Biotechnology & Pharmaceutical Management"

Module	ECTS	Course duration (h)
<b>Strategic Management of Technology &amp; Innovation</b>	<b>3</b>	<b>24,00</b>
<b>Marketing of Innovation</b>	<b>1</b>	<b>15,00</b>
Competitive Intelligence	3	24,00
Business Models in the biotechnology sector	1	15,00
<b>Entrepreneurial Finance</b>	<b>3</b>	<b>18,00</b>
Innovative Project MS	6	NA
Intellectual Property	2	15,00
<b>Accounting &amp; Finance</b>	<b>3</b>	<b>24,00</b>
Coaching & Leadership Development	1	9,00
Trends in the biotechnology Sector	1	12,00
<b>Corporate Finance &amp; Capital Markets</b>	<b>3</b>	<b>24,00</b>
<b>Project &amp; Portfolio Management</b>	<b>3</b>	<b>24,00</b>
Regulatory Affairs	1	15,00
Industry Dynamics in the biopharmaceutical sector	3	24,00
Strategic Marketing	3	24,00
Techno-Entrepreneurship	3	24,00
Business Development in the Biotechnology Sector	2	24,00
Health Economics	1	18,00
Communications in the Biotechnology Sector	1	15,00
Sales & Marketing Operations for start-ups	1	9,00
TOEIC Exam Preparation	NA	6,00
Professional Thesis	30	NA
<b>Total</b>	<b>75</b>	<b>363,00</b>

(In Bold) The first year is devoted to mastering the elements in the curriculum which provide a common foundation of fundamental management knowledge and skill. All doctoral students are required to complete these course requirements during their first year of coursework. (In Blue) Courses take place between October and January. (In Black) Courses take place between January and May.

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GRENOBLE ECOLE DE MANAGEMENT

12, rue Pierre Sémard - BP 127 - 38003 Grenoble Cedex 01 - France

Tél. : +33 4 76 70 60 60 - Fax : +33 4 76 70 60 99

E-mail : [inf@grenoble-em.com](mailto:inf@grenoble-em.com) - [www.grenoble-em.com](http://www.grenoble-em.com)



## The strengths of GEM's program come from ...

### Admission

### Online platform

### Tuition

### Information, Registration, contact

- Analytical thinking, pro-active decision making and problem-solving approaches
- Applied practical knowledge to basic business disciplines
- An industry focused curriculum
- A dynamic faculty with publications in top international peer-reviewed journals
- Practical teaching including case studies, lectures, class discussions and group projects
- An emphasis on real-world application of management principles

Students should be aware that GEM's dual degree program is selective and it takes a high level of commitment in order to complete it successfully. Students desiring to pursue the dual degree must meet the admissions requirements of the PhD program of their respective universities. Students must be admitted separately to each of the programs and admission to one has no official bearing on admission to the other. Since admission to two programs is required, interested persons are encouraged to begin their application process early. Once the student has enrolled into the PhD program and has chosen a dissertation advisor and having completed the different formalities as required for the PhD program, they may apply to the PhD/AM program.

PhD students will have access to the school's online study platform. With this resource students have the opportunity to further specialize in various disciplines. The platform provides additional course material, case studies and projects in order to assist the students in gaining further expertise.

The tuition fee for the GEM dual degree program is 15,000 euros.

Program Director: Arsia AMIR-ASLANI, PhD  
[arsia.amir-aslani@grenoble-em.com](mailto:arsia.amir-aslani@grenoble-em.com)

[www.grenoble-em.com](http://www.grenoble-em.com)

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## The rise of the professional master's degree: the answer to the postdoc/PhD bubble

Maria Theodosiou, Jean-Philippe Rennard & Arsia Amir-Aslani

**Professional master's degrees have a proven record of benefitting science-oriented individuals, reorienting their career towards nontraditional fields.**

There is no question that today's PhD students and postdoctorates face an uphill battle. PhD students are prepared exclusively for careers in academia, with little or no education about career alternatives. The postdoctoral experience provides more of the same, allowing for some expansion of the scientific experience and exploration of a new focus or approach in the molecular sciences. The result is that more and more PhDs in life sciences are caught in the postdoc bubble, with little or no hope of evolution into an academic career. This conclusion is validated by US National Institutes of Health statistics indicating that the average age for first-time grants is now 42 (ref. 1). Annual openings for academic positions such as professorships are very limited, and the competition is fierce. The current economic climate is not helping, with fewer positions and fewer grants available, thus allowing limited chances for advancement in an academic career. Even if someone with a PhD succeeds in obtaining a professorship, tenure is still a substantial hurdle that is not always overcome successfully.

The PhD student of today will spend five to seven years in the United States or three to four years in Europe solving a complex laboratory or computational problem after an in-depth classroom experience in a subset of the sciences<sup>2</sup>. At the same time, the development of students' written and oral skills—both of which are necessary for academic and industry careers—varies widely and depends on the environment and opportunities available.

What is even more shocking, given the current postdoc bubble, is the fact that students and postdocs are not informed about alterna-

tive careers in industry where their knowledge can be very useful. Current PhDs either do not know or have only a basic understanding of the processes, strategies and challenges of the life sciences industry. In addition, they often have no grasp of the various nonresearch and more business-oriented functions they can play in industry, such as marketing, quality assurance, intellectual property, strategic management or project management. Thus, the problem boils down to a lack of knowledge of what lays beyond the Holy Grail of scientific research.

The biotech sector, which dates back about 30 years, is now mature and flourishing. Cures for orphan diseases, an area not pursued by large pharma companies because of their limited profit potential, have come largely from biotech companies, leading to profits for investors. The biotech sector has also

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Biotech is a science-driven industry that requires business leaders that are also technically trained. But technical skills are only a partial requirement, with in-depth industry education and knowledge being equally important.

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recovered from the recent economic crisis and is able once again to raise funds for research<sup>3</sup>. However, biotech is a science-driven industry that requires business leaders that are also technically trained. Therefore, to enter the industry, technical skills are only a partial requirement, with in-depth industry education and knowledge being equally important. Students also

need to learn to work as part of a team and how to manage other scientists and nonscientists. These are skills not learned at the bench, where teamwork is not the norm and there is no interaction with nonscientists.

From the industry's standpoint, companies are more and more reluctant to hire new PhDs whom they view as lacking relevant education and training. Employers can afford to be more selective, seeking candidates with a broader knowledge base and skills that include not only basic laboratory science skills but also knowledge and comprehension of business topics such as finance, strategic management, portfolio management and marketing. Although it is not outside the realm of possibility to obtain an alternative career position without additional education—and this was certainly the case in the past, where on-the-job training was sufficient for career development and advancement—nowadays employers are seeking individuals with a broad skill set in addition to defined expertise.

To help bridge the chasm between the lack of knowledge of the business side of the biotech industry and companies' reluctance to hire PhDs straight out of academia, various countries have created professional master's degrees. What is needed, however, is an adjustment in the prevalent attitude that the PhD is a terminal degree that will open any door in one's career. The competitive climate and the prevalence of degrees such as the master's in business administration (MBA) as additional qualifications no longer make this possible. The current educational climate and model for professional success is one of continuous education, and science PhDs are no exception to the rule.

### A multidisciplinary approach

The idea that after 20 or more years of education, a PhD is no longer enough to be competitive

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Maria Theodosiou, Jean-Philippe Rennard & Arsia Amir-Aslani are at Grenoble School of Management, Grenoble, France.  
e-mail: arsia.amir-aslani@grenoble-em.com

in the job market is very discouraging. Gone are the days of on-the-job training. Today's employers are more demanding in their hiring practices. Alternative careers necessitate additional degrees such as the MBA or master's in public health, which are viewed as opportunities to gain additional skills. Such programs, though, are often ill-suited to the needs of science PhDs and in some cases may restrict instead of broaden future career opportunities.

The solution to the dilemma comes in the form of professional master's degrees that are specifically designed to offer additional skills to those that come from a scientific background. Aimed at closing the gap between science and business, courses often offer more practical, hands-on experience in addition to traditional business courses such as finance, policy, law and communications. It is in fact the combination of courses and hands-on experience that separates the professional master's degree from other graduate degree programs. The multidisciplinary approach of these programs broadens the knowledge of students and gives them the flexibility to choose a career that is suited to them, making them more attractive to employers who are concerned that newly minted PhDs don't have the skills for the jobs at their company.

As PhD educations currently do not provide enough training for students to be competitive in the job market, whether in industry or academia, skills in communications and finance have a universal appeal in post-PhD positions and are necessary in order to be competitive. MBAs, although offering comprehensive management skills, are too general; they do not provide extensive training in a particular area but also do not correspond to the exact needs of the biotech and pharma industries. Advanced or professional master's degrees, on the other

hand, are specifically built to respond to the needs of the sector.

For the most part, the industry professionals who teach advanced master's degrees bring their real-world experience to the classroom. This adds a dimension to the professional master's programs that is not observed with other post-graduate degrees. The programs are specifically tailored to biotech, with modules accurately reflecting the needs of the sector, such as finance, marketing, business development, industry dynamics, intellectual property and competitive intelligence. Given that students already have the scientific background, the programs focus on providing the scientists with the business tools they need. Therefore, in addition to responding to the needs of scientists, these programs respond to the needs of the industry itself. Such programs also take into account that classical teaching methods are not appropriate for all modules and adopt an innovative pedagogical approach. Throughout the program, the students become aware of how different subjects are interrelated and thus gain a comprehensive knowledge of the pharma and biotech sectors.

The trump card of the professional master's degrees is the hands-on experience the students are expected to gain through internships in their topic of choice, with pharma or biotech companies. In addition to the immersion learning that takes place through full-time and part-time internships, students are also placed in real-world situations. For example, in one master's degree program, students take on an innovation project and work in teams to solve a problem presented by a company, usually a startup. These projects are highly unstructured, at different stages of development, and the experience that each student has is highly dependent on

the project. Students perform market studies, develop business plans and help the company evolve the project along the pipeline. It is not uncommon at the end of the project for the students to make a negative recommendation as to whether a project should proceed or not, given their findings. It is a highly rewarding experience as it accurately reflects real-life situations. In effect, many early-stage projects are highly unstructured and undefined, and dual skills in science and management must be applied to give them shape and form. The innovation project is one example of the imaginative pedagogical approaches adopted by these professional degrees, where one size definitely does not fit all.

## Conclusions

Many PhDs are finding out the hard way how challenging it is to obtain that first position out of the academic laboratory. The skills learned as a PhD student or postdoctoral scientist do not always translate into industry and are often not enough to impress employers. All things being equal, employers will always hire the PhD with additional business administration training.

The reality is now setting in for many PhDs that they need additional training. Professional master's degrees have a proven record of benefiting individuals trained in science, reorienting their career towards nontraditional fields. The monetary and time investment that goes into obtaining a professional master's degree, although significant, is in the end worthwhile.

## COMPETING FINANCIAL INTERESTS

The authors declare no competing financial interests.

1. Schuster, S.M. *BAMBED* **37**, 381–382 (2009).
2. Schuster, S.M. *BAMBED* **39**, 61–62 (2011).
3. Huggett, B., Hodgson, J. & Lahteenmaki, R. *Nat. Biotechnol.* **29**, 585–591 (2011).