NEWS etter GEPROVAS

Groupe Européen de Recherche sur les Prothèses Appliquées à la Chirurgie Vasculaire



Edito

Nabil CHAKFÉ Prof. MD, PhD - President of GEPROVAS

Back on a year full of achievements

In our previous newsletter, we presented our ambitions for 2017.

We have worked hard and we are pleased to welcome Céline Petitjean and Sophie Pluquet-Riemer as new collaborators for the education platform as well as Hugo Gangloff, our new PhD student, for the explant analysis platform.

The 10th edition of our European Symposium on Vascular Biomaterials ESVB 2017 brought together in Strasbourg more than 300 actors of the international scene (surgeons, people from the industry, researchers ...). We are proud that each edition becomes more and more successful and this reinforces the idea that multidisciplinarity is necessary to improve and make evolve the future technologies and products

We were talking about it in 2017, it will happen in the spring of 2018... GEPROVAS will move to its new building at the University of Strasbourg, which strongly supports our project. You'll discover it in a few months !

Thank you for your interest and support in our project.

INFORM | ANALYSE | IMPROVE

Leading actor in public health

The GEPROVAS is an independant and certified structure in charge or research, monitoring and aging characterisation in the field of cardiovascular implantable medical devices. The GEPROVAS is also involved in the training of

surgeons and medical teams.

GEPROVAS'S activities are certified NF EN ISO 9001. GEPROVAS' test plateform is certified NF EN ISO 13485.







PORTRAIT

Céline Petitjean

Education platform manage

Graduated from an engineer health ICT school and holder of a master's degree in Robotic Imaging and Engineering for the Living, Céline joins the GEPROVAS

to contribute with both her technical skills and her medical knowledge to the development of our organization. This dual expertise, reinforced by the projects she has run in start-up and research laboratory on medical technologies, particularly in surgical simulation, puts Céline at the interface between clinical and technical teams. She will be involved in the development of the training activity to improve and secure surgical practices through the development of innovative teaching tools.

Education



Simulation center

The Education department continued its development in 2017 with the animation of 7 Simulation 4 days lasting workshops.

These workshops aimed at developing the acquisition of technical gestures and automating the steps of a procedure in order to secure and improve patient care.

What's new in 2018?

• From simulation planning to reality:

The simulation of complex cases of the aorta will now be possible based on real cases of patients. This opens up the vast field of pre-operative preparation assisted by simulation. These trainings will begin in 2018 at the GEPROVAS simulation & training center.

• GEPROVAS has signed an agreement to set up sales force training for medical device manufacturers to be launched in early 2018.

We were talking about it in 2016:

the 1st edition of the eSIM&SURG course, funded by an Initiative of Excellence (Idex) program from the University of Strasbourg has become very attractive among the future doctors of the Faculty of Medicine of Strasbourg. Half-elearning, Half-practical work, this course aims to offer an innovative teaching for the initiation to the basic gestures of the practice of surgery.

FOCUS

Endovascular Simulation Bootcamp 2017

Dedicated to endovascular simulation, the 3rd bootcamp was held on October 12, 2017 during the European Symposium on Vascular Biomaterials (ESVB next page) with the participation of 6 industrial partners :

Mectronic Further, Together









20 international interns were able to learn about endovascular suture and simulation workshops in a warm and challenging atmosphere! The next edition will take place on 18 and 19 October 2018 ! Do not miss it!



PORTRAIT



Education platform coordinator

« As a medical secretary with twenty years of experience with a world-renowned surgeon, I have diversified my skills, particularly through the organization of medical and surgical training for students, surgeons and medical representatives. I joined the GEPROVAS in 2017 to share my experience, my ideas and take advantage of my expertise to strengthen the organization of the education platform. »



Event





The European Symposium on Vascular Biomaterials (ESVB) celebrated its 10th anniversary at the "Palais de la Musique et des Congrès" in Strasbourg from 12 to14 October 2017.

It is the largest event on biomaterials applied to vascular surgery in Europe.

A place of sharing

This European symposium is a meeting place for international and scientific sharing. Each edition is even more unifying and translational.

Latest advances in biomaterials

and vascular techniques

This 10th edition has dealt with the durability of materials in vascular surgery, the latest trends in per-operative imaging, the properties of tissues, plaques and vessels in the presence of endovascular biomaterials.

Why in Alsace?

Pioneer and unique, the GEPROVAS is the only vascular explant platform in the world. The ESVB is the expression of the environment which hatched in 1993 following the collaboration between Professor Nabil Chakfé (PU-PH, Vascular Surgeon, Strasbourg) and Professor Bernard Durand (Mechanics of soft materials, University of Haute Alsace, Mulhouse) to understand and characterize the complications that occur on vascular prostheses.

Our 10th anniversary has been a huge success:



ESVB supports young researchers:

Congratulations to the 4 young researchers who won the ESVB 2017 awards:

Rodrigo ROMAROWSKI | Poster Prize – Université de Strasbourg: Virtual endograft deployment as an early predictor of post-operative TEVAR outcome Adeline SCHWEIN | 3rd Price – Université de Haute Alsace: An Innovative porcine model of acute and chronic central venous thrombosis mimicking human pathology Monika COLOMBO | 2nd Price - Eurométropole de Strasbourg : Intra-stent restenosis in femoral arteries: from imaging to patient-specific computer simulation Jérémie JAYET | 1st Price - GEPROVAS : Experimental in situ laser fenestration creates immediate substantial textile damages



Left to right :

Prof. Frédéric HEIM, Rodrigo ROMAROWSKI, Prof. Jean BISMUTH, Adeline SCHWEIN, Wolfgang MEICHELBOECK, Monika COLOMBO, Prof. Nabil CHAKFÉ, Jérémie JAYET, Amain DIETERLEN (Université de Haute Alsace), Hélène MÔME (Eurométropole de Strasbourg), Serge POTIER (Université de Strasbourg).

FOCUS

The INNOV'illage

For this special edition, the ESVB has organised an innovation contest for innovative start-ups in the field of surgery and medical technologies!

SimforHealth is the winner of the 2017 Innovation Price.

SimforHealth is a leader in innovative digital solutions aimed at improving the training of healthcare professionals. The company collaborates with faculties, medical schools and training organizations to develop immersive and interactive solutions for medical education: virtual consultations, real-time 3D simulators and virtual reality...

Learn more: follow the links www.simforhealth.com and www.mediactiv.com

Stay connected :

Next Edition will occur on **October 17 -19 2019**, with topics covering latest issues in the field of vascular biomaterials. Find us on LinkedIn @ESVB and Twitter @ESVB_Strasbourg

Follow-up



Designing, innovating and educating are the key words at GEPROVAS, even more with the **post-market studies** that places us at the forefront of medical technology **by preserving the patient safety.**

The clinical follow-up in figures:

23 studies since 2013 (+ 30%)

234 patients included in Strasbourg since 2013 (+ 26%)

593 suivis in Strasbourg (+100 %)

156 follow-up visits since the beginning of 2017 (+ 48%)

90% compliance rate in Strasbourg **Carotid artery**

CAR, Université d'Utrecht

Thoracic Aorta

- > TAG, W. L. Gore & Associates®
- Zenith[®] TAA, Cook Medical[®]
- REP, Bolton Medical[®]
- EFER, Bolton Medical ®
- VALIANT-EVO, Medtronic®
- EPI-FLEX, Vascutek®

Abdominal Aorta

- GREAT, W. L. Gore & Associates[®]
- Zenith [®] AAA, Cook Medical [®]
- EPI-ANA01, Vascutek®
- EPPICA, CHU de Strasbourg
- ZFEN, cook Medical [®]
- ESSEA, CHU de Nice
- ANCHOR, Medtronic [®]

Legs

- INPACT, Medtronic®
- VIABAHN, W.L. Gore & Associates®
- VOYAGER, Bayer Healthcare®
- EMINENT, Boston Scientific[®]
- LEUCOPRO, CHU d'Angers
- INTACT, CHU de Bordeaux
- TECCO, CHU de Nantes
- ▶ TAILOR, Jotec[®]

To find out more visit www.geprovas.org > Improve > Clinical Research

FOCUS

EPPICA Clinical study

Launching in 2018 of the EPPICA clinical study, whose principal investigator is Dr. Anne Lejay (MCU-PH in the department of vascular surgery and renal transplantation) in collaboration with Professor Bernard Geny's EA 3072.

This clinical study aims to study the protective effects of ischemic pre-conditioning on cardiac, renal, pulmonary and muscular functions during abdominal aortic aneurysm surgery.

Up to now, open surgery of aneurysms of the aorta can lead to cardiac, renal, pulmonary and muscular complications. These complications may be related to ischemia-reperfusion, that is to say the clamping and unclamping of the aorta, and require to replace the aneurysmal aorta. The objective of the EPPICA research protocol is **to reduce organ involve-ment** due to aortic clamping by implementing a suitable clinical protocol. The goal is to "condition the body" before performing aortic clamping. This conditioning is done by brief sequences of ischemia-reperfusion before the aortic clamping, so that the organism keeps in memory these attacks of weaker degree and develops at that time mechanisms of defense (anti-oxidants), which will help him to better tolerate the prolonged ischemia that will be required for subsequent aortic clamping.

Explant analysis



Explant analysis in figures:

622 explants

in the GEPROVAS database

More than 100 explants in 2017 More than 20 brands of manufacturers in the database

3 articles published in 2017

in the European Journal of Vascular and Endovascular Surgery (EJVES)

Read the Focus to find out more...



PORTRAIT

Hugo Gangloff PhD student

Graduated from Telecom SudParis, Hugo joined the GEPROVAS explant analysis platform in October 2017 as part of a doctoral position. Through the development of modern medical image processing techniques, his mission is to build digital tools for explant analysis. He will have to conciliate medical research and applied mathematical research for the development of safer medical devices. List of actions performed at GEPROVAS in order to meet the needs of manufacturers according to the new European regulation (2017/745) related to medical devices that came into force in May 2017:

2011 Launch of the Collaborative Explant Analysis Program in Strasbourg

2012 - 2014 ISO 9001 & ISO 13.485 certification of the platform (CE marking)

2015 Development of the services available on the database

2016 First nomenclature about the ageing and the degradation processes of biomaterials statistically found in the database

2017 Ministry grant for a collaborative research study between the ICube laboratory of Prof. Collet (University of Strasbourg) and GEPROVAS. Hugo Gangloff (see Portrait) will focus its research on the development of cutting-edge imaging tools and technology for **automating explant analysis procedures**.

FOCUS

A nomenclature about degradations and ageing of standard prostheses, what does it mean?

Over the last 5 years, GEPROVAS has been developing a unique and worldwide database of implantable medical devices (IMD) in the field of vascular surgery. The aim of this database is to provide surgeons and prosthesis manufacturers with the most detailed information on the fate of the materials used for these explants (textile and metal) depending on the number of years of implantation. This includes understanding and characterizing (naming) the mechanisms of degradation and failure modes that could be involved during the time of implantation of the prosthesis in the patient. In the future, the possibility of finding post-market monitoring information and the precise identification of the causes of the deterioration will make it possible to optimize the products during their conception in order to guarantee the greatest safety for the patient. On the other hand, the development of an automated approach for analyzing explants according to a standardized nomenclature will make it possible to process a growing number of explants in the database. It will then be possible to meet an increasing demand in the coming years.

Textile Aging Characterization on New Generations of Explanted Commercial Endoprostheses: A Preliminary Study. Bussmann et al. Eur J Vasc Endovasc Surg. 2017

In short



November 2016 - November 2017: Master's student research collaboration on his project on "Experimental *in situ* laser fenestration creates immediate substantial textile damages".

May 2017: Prof. CHAKFÉ presented the GEPROVAS project at the "Institut Montaigne" (independent think-tank, Paris) as part of a working group dedicated to health innovation.

May - September 2017: Internship of a engineer student from the Textile school of Roubaix (ENSAIT) on the explant analysis platform for the optimization of explant washing processes.

June 2017: Emilie BONNIN, a vascular surgeon, won a grant from SCVE (French Society of Vascular and Endovascular Surgery) for her research project on the characterization of non covered stents by medical imaging.

July 2017: a delegation of heads of vascular department from Shanghai went all the way from China to visit our explant analysis platform and our simulation center as well as the vascular surgery and renal transplantation department led by Pr. Nabil Chakfé in the Nouvel Hôpital Civil in Strasbourg, France.

September 2017: Professor CHAKFÉ was invited to the "Palais de l'Elysée" by the French President Emmanuel MACRON to present his vision of innovation in health.

September 2017 - December 2017: The GEPROVAS contributed to the temporary exhibition "Au bout du fil" in Bischwiller returning to the textile industrial revolution in Europe, the golden age of the small town of Bischwiller in the nineteenth to present to the public the current textile industry in fields as diverse as "haute couture", sports or medicine.

October 2017: 10th edition of the European Congress on Vascular Biomaterials organized by GEPROVAS. 3rd edition of the Endovascular Simulation Bootcamp.

November 2017: Adeline SCHWEIN came back to the Vascular Surgery and Renal Transplant department of Strasbourg after 3 years of research at the Methodist Hospital in Houston where she brilliantly conducted under the supervision of Prof. Jean BISMUTH research on the future endovascular guidance techniques.

December 2017: Hugo GANGLOFF won the "Trophée IIe-de-France André Blanc-Lapierre 2017" for his Master degree project at Télécom SudParis.









Above: Award of the Trophy Ile-de-France André Blanc-Lapierre 2017 to Hugo GANGLOFF

Opposite: Visit of the Chinese delegation

In short



GEPROVAS In figures:

10 simulation workshops

ESVB Congress

100 explants

23 clinical post-market studies

6 research projects (internal and collaborative)

34 international publications co-signed by our researchers and volunteers

4 direct thematic publications for GEPROVAS

20 presentations of the GEPROVAS activities at national or international conventions by the team

Become a member or donor

You are convinced by the projects carried by the GEPROVAS, do not hesitate to join the "Les Amis du GEPROVAS" by making donations or becoming members.

Nothing's easier : follow the link



www.geprovas.org/files/63/adhesion-donation-form-fr.pdf Find all our information online:

www.geprovas.org









In 2017, "Les Amis du GEPROVAS" has been mobilized by organizing Visit Tour of our activities. Interested? contact us by email at contact@geprovas.org

Permanent members of GEPROVAS:

Nabil Chakfé | MD, PhD - President Bernard Durand | PhD - Vice President Frédéric Heim | PhD - Head of R&D Fabien Thaveau | MD, PhD - Treasurer, Head of Clinical Research Yannick Georg | MD - Head of Education Anne Lejay | MD, PhD - Associate Julie Papillon | PhD - Head of Operations Camille Schmidt | Study Coordinator Delphine Dion | Explant analysis platform manager Céline Petitjean | Education platform manager Nathalie Couvreur | Administrative manager In partnership with Sophie Pluquet-Riemer | Education platform coordinator

HAUTE-ALSACE



Groupe Européen de Recherche sur les Prothèses Appliquées à la Chirurgie Vasculaire

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GEPROVAS is supported by:

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