



# Meeting Minutes

## BioArt Full Meeting Austria

**Date & Duration:** 2019.06.03 – 9:30 until 2019.06.07 – 16:00

<b>Attendees:</b>	Oleksandr Tarasov	Donbass State Engineering Academy
	Oleksandr Altukhov	Donbass State Engineering Academy
	Oleksandr Hrushko	Vinnitsya National Technical University
	Serhii Tymchyk	Vinnitsya National Technical University
	David Luengo	Universidad Politécnica de Madrid
	David Osés	Universidad Politécnica de Madrid
	Inga Fedotova	Sytenko Institute of spine and joints pathology
	Galyna Tabunshchik	Zaporizhzhya National Technical University
	Vadym Shalomeev	Zaporizhzhya National Technical University
	Kfir Ben-Harush	Sami Shamoon College of Engineering
	Adi Wolfson	Sami Shamoon College of Engineering
	Olena Sorochan	Priazovskyi State Technical University
	Oleksandr Azarhov	Priazovskyi State Technical University
	V. Voloshyn	Priazovskyi State Technical University
	Ronen Sosnik	Holon Institute of Technology (H.I.T.)
	Amos Bardea	Holon Institute of Technology (H.I.T.)
	Bracha Einhorn	Holon Institute of Technology (H.I.T.)
	Kinga Korniejenko	Cracow University of Technology
	Daniel Schuval	Bar Ilan University
	Yaakov Tischler	Bar Ilan University
	Peter Arras	KU Leuven – Faculty of Engineering Technology
	Eli Schmuely	Inter-University Computation Center
	Albert Treytl	Donau-Universität Krems
	Stephanie Nestawal	Donau-Universität Krems
	Giulia Mazza	Donau-Universität Krems
	Elena Eyngorn	External Reviewer

**Absentees:** n.a.

**Location:** DUK, Krems and Wr. Neustadt, Austria

**Written by:** Albert Treytl



Day 1 03.06.2019

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## TOP 1 Keynote on Biomechanics

After a welcome of vice rector for research Victoria Weber Prof. Dieter Pahr from TU Wien technical University and Karl Landsteiner Medical University gave a keynote presentation on biomechanics including sensor applications. The group also had the possibility to visit the biomechanics lab to have a real-life experience what is required to analyse, prepare and test samples. Impressive have been the analysis of bones of stoneage baby twins.

(contact: [biomech@kl.ac.at](mailto:biomech@kl.ac.at))

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## TOP 2 Expert talks on lectures

The afternoon was dedicated to the exchange of teaching information on the courses prepared and designed for BioArt. These talks have been supplemented by expert talks in relevant topics that are also important for the fields of BioArt. Following talks have been presented and discussed:

- Current trends in regenerative medicine – Ass. Prof. Andrea De-Luna  
(contact: [andrea.deluna@donau-uni.ac.at](mailto:andrea.deluna@donau-uni.ac.at))
- Blood purification and blood material interaction – Ass. Prof. Jens Hartmann  
(contact: [jens.hartmann@donau-uni.ac.at](mailto:jens.hartmann@donau-uni.ac.at))
- Biosensor and biosensor microsystem – Dr. Martin Brand, head of center for water and environment sensors  
(contact: [martin.brandl@donau-uni.ac.at](mailto:martin.brandl@donau-uni.ac.at))
- Implantable Sensors – Dr. Giulia Mazza, senior research fellow  
(contact: [giulia.mazza@donau-uni.ac.at](mailto:giulia.mazza@donau-uni.ac.at))
- Design and optimization of microfluidic systems – Dr. Markus Gusenbauer, senior research fellow  
(contact: [markus.gusenbauer@donau-uni.ac.at](mailto:markus.gusenbauer@donau-uni.ac.at))



Day 2 04.06.2019

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### TOP 3 Visit of biolabs for research and student education

The consortium visited the biolabs on the campus Krems. Ass. Prof. Jens Hartmann introduced the core facility for biomedical imaging and gave the participants a hands-on demonstration on electron microscopy and the problems in preparation of samples. Afterwards Prof. Harald Hundsberger (contact: [harald.hundsberger@fh-krems.ac.at](mailto:harald.hundsberger@fh-krems.ac.at)) presented the student labs for biomedical engineering for basic training and advanced education. A fruitful discussion spawned on different curricula and the purpose and use of the labs. Especially important for training have been a good equipment with audio/visual equipment to blend classroom and lab.

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### TOP 4 Pilot teaching

Partners from Ukraine and Israel reported on the status of the pilot teaching and equipment purchase

The new curricula will consist of a mixture of existing, updated and new courses. At least 2 new or strongly updated courses are required. The following lists only contains very important point of general interest. Details on the status can be found in the presentations:

ZNTU reported on their activities

- In particular it has been mentioned that actually only 10 students enrolled/are expected to enroll and that this is in conflict with the high number of 600 students promised in the proposal

PSTU - Mariupol

- Laboratory purchase

DSEA - Kramatorsk

VNTU - Vinnytsa

- Presentation of lecture/discipline overview with credits

SCE

- Two needed courses on Python and machine learning and
- Biopolymers + Biomaterial production
- 2 updated courses on signal processing and image processing

HIT

- As planned
- Neural implant
- Deep learning for medical imaging (practical work within lecture)
- Curriculum committee in Juli/August - Start in 10.2019

BIU

- Computational Biology for Engineers
- Biological Data Science

Workshops held by European partners at VNTU and HIT

- Actual teaching only a few hours
- Analysis of pilot teaching
- Start definition of workshop (teaching day, meeting with lecturers/students)

AI A1

Evaluation of pilot teaching



- Will be done in local language to reduce language barrier and to facilitate existing questionnaires at partner universities
- Only a summary will be submitted by each university
- DUK will send a template for the evaluation report on pilot teaching

AI A2

Day 3 05.06.2019

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## TOP 5 Design of implantable devices and biosensor systems

After a welcome of Prof. Huber Brückl, head of the department for integrated sensor systems, following presentation have been given and discussed to highlight important trends in bio-sensor systems relevant to be anticipated in the Bioart teaching:

- Magnetic sensor for biomedical applications – Prof. Huber Brückl (contact: [Hubert.brueckl@donau-uni.ac.at](mailto:Hubert.brueckl@donau-uni.ac.at))
  - Wearables in medical applications – Anetta Nagy and Thomas Bigler (contact: [Anetta.nagy@donau-uni.ac.at](mailto:Anetta.nagy@donau-uni.ac.at), [Thomas.bigler@donau-uni.ac.at](mailto:Thomas.bigler@donau-uni.ac.at))
  - Machine learning – Dr. Aleksey Bratukhin (contact: [Aleksey.bratukhin@donau-uni.ac.at](mailto:Aleksey.bratukhin@donau-uni.ac.at))
  - MEMS sensors for implantable devices – Dr. Wilfried Hortschitz (contact: [wilfried.hortschitz@donau-uni.ac.at](mailto:wilfried.hortschitz@donau-uni.ac.at))
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## TOP 6 Visit of companies and research facilities

The afternoon was dedicated to visit innovative research facilities and companies at the campus Technopol Wr. Neustadt.

Mr. Rainer Gotsbacher, manager of the Technopol Wr. Neustadt presented the concept of the county of Lower Austria to focus education, research and industry in Lower Austria to create critical masses. Afterwards in individual groups the following high-tech companies have been visited:

- Fotec – a research spin-off of the university of applied sciences Wr. Neustadt being a technology center for (metal) 3D printing in Lower Austria
- Austrian Institute for Technology, Competence Unit Biomedical Systems gave an insight into the development of medical devices and corrosion testing. It has been anticipated that in particular the process of certification is extremely important, since students need to know that this process already begin at the very early development stages.
- Austrian Center for Medical Innovation and Technology gave insight into the design of implants and also presented their activities to design medical robots and phantoms for training

Day 4 06.06.2019

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## TOP 7 Innovation transfer

An important fact for enabling students for the labor market or the become entrepreneurs themselves is to start introduction innovation already during their studies. These competencies will gain high importance aside a solid technical education.

Mr. Peiman Zamani from the Lower Austrian innovation agency Accent (contact: [peiman.zamani@creativepreincubator.at](mailto:peiman.zamani@creativepreincubator.at)), Mr. Josef Farthofer from the University of Applied Sciences Wieselburg (contact: [josef.farthofer@amu.at](mailto:josef.farthofer@amu.at)) and Dr. Tina Gruber-Mücke from the University of Applied Sciences Krems (contact: [tina.gruber-muecke@fh-krems.ac.at](mailto:tina.gruber-muecke@fh-krems.ac.at)) introduced the participants in the basics of innovation transfer and the empowerment of Lower Austrian companies.

Then the companies Empulsion (contact: [thomas.nennadal@enpulsion.com](mailto:thomas.nennadal@enpulsion.com)) and Saphenus (contact: [florian.schirg@accent.at](mailto:florian.schirg@accent.at)) have been presented as best practice examples and gave direct insights in the hurdles and success factors for being an innovative but also successful technology startup.

## TOP 8 Management/Project coordination

### Project meeting in Belgium

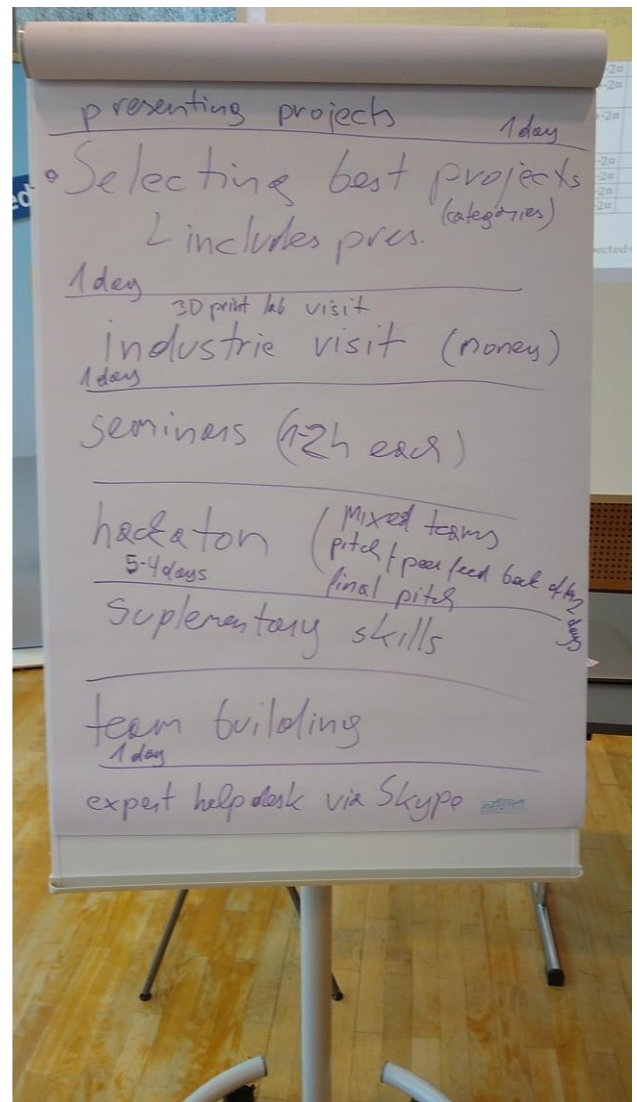
- Peter Arras presented the planning of the next project meeting in Belgium (see slides)

### Planning of the next meetings

- 2<sup>nd</sup> – 6<sup>th</sup> of September 2019: Meeting at KU Leuven
- 5th - 6th of November Dissemination meeting in IL
- 13th-16th of January; 20th-23th as Alternative: Development meeting in IL
- 31/3/20-2/4/20: Development meeting in UA

### Brainstorming on the student contest

- Draft of programme (see picture)
- 2(3) students should be send by each institution
- Rules will be elaborated by UPM AI A3
- Check whether credits can be given to students for student contest
- Albert will check on possible lecturer for innovation transfer AI A4
- UPM will organize a Skype meeting for planning AI A 3 David send appointment
- Discussion of time for pilot teaching (availability of cheap accommodation/flights, availability of teachers and local support,...)
- Possible days discussed but not agreed on:
  - Students: 20-29 of July
  - Staff: 20-24 of July
  - Students: 24 of August – 2 of September
  - Staff: 24-28 of August
  - Staff should be present at the end for giving the awards
- Pilot teaching decide workshop content and time in meeting at KULeuven
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### Reporting

- Timesheets:
  - role corresponds to the project tasks not the role in the institution
  - separate timesheets for reach role and period
- Joint Declarations:
  - use correct reference numbers and
  - consecutive number for activities
  - separate entries for each role and period
  - scanned copies of documents required
- Equipment and subcontracting:
  - documentation required for tendering process



- different offers
- invoices
- document that the equipment is on the account of university
- Travelling
  - Destination for this meeting in Austria should be Krems!
- translation must be done but do not need to be sworn translation
- David will send financial statements AI A5
- All partners need to check and amend AI A6
- All partners should provide invoices latest 28th of June AI A6
- All partners should provide financial statements until 30th of June for period until 30th of June AI A 6
- All partners should check travel list and give amount and justification AI A7
- All partners should send update of procurement plan latest until 26th of June AI A8

#### Dissemination activities

- A Mikro-rollup for advertisement was suggested - latest for September meeting
- In Mariupol a local conference to link industry, school and university will be organized in autumn 2019

Day 5 07.06.2019

## TOP 9 Review Meeting

### Elena Eyngorn (EG) is presenting her ideas about the review process

- changes should be send to EG AI A9TODO:UPM, ALL
- analysis against the current state of the field
- pilot teaching will be extremely important (incl. review of pilot teaching)
- performance measurement during (at least 4-6 months) and after the pilot teaching (check different target groups - students, companies,market)
- review process until end of the project (focus on next three months)
- website cannot be found; link from every partner website (most important for EC)
- NEO reports AI A10
- Elena will send "evaluation matrix", which needs to be filled by all partners until 15th of July
- summer school also for other students - training for industry - commercialize 500EUR reward for student contest
- Visit with other projects (joint event)
- Send password to UPMdrive AI A11
- 12 courses have to be uploaded
- General curriculum update in bioengineering with two new courses and update multiple courses
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### Counting of students in pilot teaching

- 15-25 students per pilot teaching is a good result
- 10 students are a little bit too few
- Suggestions
  - Invite complete university to a master class
  - List total amount of students involved in the project (head count) at different occasions.
- Student count will involve all students that have relations to the project.



## TOP 10 Bilateral talks

Bilateral talks have been done on the following topics:

**with the external evaluator Elena Eyngorn:**

- with different partners, confidential

**Design and content of the website:**

- Website: see [immateng.eu](http://immateng.eu) as reference example
- at least 5 years after end of the project
- Better pictures
- Text from existing material
- tagging to improve visibility
- 30th of June - content filled and new structure
- Link+Logo+1 paragraph (1 paragraph, 30th of June) AI A12
- Meeting text+picture+pdf containing of (participant+agenda) AI A13

**Collaborative space:**

- WIKI for real collaboration
  - good practice section with lab example, exam questions
  - laboratory work
- Tool for Studentcontest (communication) and workshops at HIT and VNTU
- Add agenda point for mangement meeting in LEUVEN AI A14
- Setup WIKI, Unico second half of July, AI A15

**IPR issues for teaching material**

- copyright: for teaching ok; fair use – DUK will prepare information for next meeting AI A16
- define licence creative commons for protection and use of other issues
- difference between teaching in class or online
- solution is to upload slides without pictures
- Discussion and decision at meeting at KULeuven in September

## TOP 11 Action Items

Nr.	Description	Responsible	Due date
AI A1	Definition of agenda for workshops at HIT and VNTU; preliminary results in meeting at KULeuven	HIT, VNTU	3.9.2019
AI A2	Template for the summary evaluation report for the pilot teaching	DUK	3.9.2019
AI A3	Rules and concept for the student contest (UPM will organize a telco and initially lead the process)	UPM	3.9.2019
AI A4	Organizing a lecturer for innovation transfer for the student contest	DUK (AT)	3.9.2019
AI A5	Send reminder with documents for financial reporting to all partners	UPM	June 2019
AI A6	Send financial reporting including invoices for purchasing equipment, travel,...	ALL partners	30 <sup>th</sup> of June
AI A7	Send changes in travel plans to David Luengo	ALL partners	30 <sup>th</sup> of June
AI A8	Send update of procurement plan	All partners	26 <sup>th</sup> of June





		from UA and IL	2019
AI A9	Send changes in project execution (compared to the proposal) to reviewer Elena Eyngorn)	UPM, ALL partners	Asap.
AI A10	Send NEO reports to reviewer Elena Eyngorn	UPM, SCE, ZNTU	Asap
AI A11	Send access data for UPM drive to Elena Eyngorn	UPM	Asap
AI A12	Send partner information for website to IUCC (Link, Logo, 1 paragraph of text	ALL partners	30.6.2019
AI A13	Send information about meeting in Austria to IUCC	DUK	30.6.2019
AI A14	Discussion of collaborative space at meeting in KULeuven (add to agenda)	IUCC	30.7.2019
AI A15	Setup of Wiki as collaborative space	IUCC, UPM	30.7.2019
AI A16	Preparation of copyright information for next meeting	DUK	3.9.2019