

## AOCMF: Guidelines for research grant applications

### 'Translational approaches for bone constructs: their impact on facial bone reconstruction'

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Applications which do not conform completely to the website application format or ignore or fail to comply with any part of the guidelines may be returned to the applicant. They will not be considered unless resubmitted by the deadline.

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**General information** The AOCMF Research and Development Commission is pleased to announce a first call in the field of 'Translational approaches for bone constructs: their impact on facial bone reconstruction'

**Background** This call is to solicit applications to develop constructs for translational approaches to bone repair. Short-term preclinical research should focus on cell growth, cell carriers, scaffolds and other biomaterials, growth factors that enhances bone growth in experimental settings, development 3D printable osteogenic or osteoconductive constructs, or assessing relevant bio-physiological aspects for cell maintenance in biomaterial, e.g. vascular components, stem cell properties, mechanics, magnets/ easy electricity, and bioreactors. The results should be applicable for clinical studies.

The mid-term aim is to start bone defect repair studies using bone substitute biomaterials in non-malignant diseases (non-irradiated tissues). Targets are mandibular defect repair using bone regeneration technology with scaffolds and/ or CAD – CAM reconstruction (plates and scaffolds). The research topic needs to be either translational (nonclinical / preclinical) or clinical.

The long-term goal is the intraoperative reconstruction of facial bone defect using 3D printable bone substitute material. It includes areas like cell preparation techniques, intraoperative reconstruction methods, TERM, custom-made scaffold printing and customized (tissue engineered) free flaps

**Research questions** The use of bone tissue engineering for facial bone defect repair with regards to the clinical outcome of orthopedic, oral and maxillofacial procedures is not well established. Despite clear development of CAD-CAM technology in medicine and regenerative medicine in surgery, modern facial reconstructive surgery will not be possible without focused high quality, multispecialty research both on a translational and clinical level.

For example:

- What are optimal materials and/or bone substitute materials for additive manufacturing (CAD—CAM) for scaffolds, matrices and implants?
- What are the critical stages in CAD-CAM process in medicine?
- Are cells necessary in implantable bone substitute material?
- What are the relevant stages in bone defect repair and direct (digital) manufacturing technologies in clinical settings?

**Focus** The focus of the research projects includes repairing bone defects using bone substitute materials, digital design technology, and additive manufacturing processes.

The proposed projects:

- Should focus on clinical and/or translational research
- May include imaging and planning aspects of the above-mentioned facial skeleton defects
- Can be related to bone tissue biology/tissue engineering, implant development, documentation, diagnosis and treatment
- Should improve educational content for courses that address reconstructive surgery and tissue engineering

**Type of research** This open call is suitable to both preclinical and clinical research.

**Peer review** All applications will be independently peer reviewed. Projects will be selected based on the novelty, feasibility, significance of the proposal, attributes of the candidate, including potential for independence, evidence of institutional commitment, and the research environment.

**Details of grants** We invite grant applications for this call to be funded in 2018.

**Submission deadline is December 12, 2017, by 17:00 hours (GMT).**

Applicants should be aware that the total amount of funding available for this program is limited. All applications will be scrutinized regarding their financial aspects as well their scientific merit. Requested funding should be reasonable for a 1 – 3-year project duration.

**Application form** The application must be submitted in English using the AOCMF application form "Translational approaches for bone constructs: Their impact on facial bone reconstruction": Do not exceed the indicated number of characters and pages. This allows adequate evaluation regarding relevance, quality and cost of the projects.

**Applications which are incomplete or do not comply with our guidelines may not be considered.**

The following topics must be covered in the application under these headings:

- General Information: at least 3 keywords must be chosen from the provided pdf list
- Abstract of the research project
- Outline of the problem
- State of the art in this field
- Past research of the applicant in this field
- Hypothesis, open questions, aim of the project
- Detailed research plan:
  - Study subjects, study design, specimens or materials
  - Predictor and outcome variables
  - Methods for taking measurements, data management and analysis
  - Estimation of sample size
- Relevance of the project
- Time schedule
- Relevant literature by the applicant and by other authors

**The application form must be e-mailed as an unprotected Word-document to [mirjam.bucher@aocmf.org](mailto:mirjam.bucher@aocmf.org). Please do not edit any font and do not use full text capital letters**

## Funding policy

**Duration:** up to 3 years

### Salaries

Salaries for the principal applicant and co-applicants will not normally be approved.

If the project is only possible with some funding for the applicants, it must be clearly shown that the funding requested is essential, project specific and well documented, and that the individual has no other source of grant or income.

Written and signed confirmation is required with the application from the PI and the head of his/her institution, indicating that no alternative source of income (including salary, stipend or grant) is available. This confirmation must indicate how this/those individual/s are currently employed and paid. Applications which fail to provide this information will be returned to the applicant.

### International conference

If AOCMF organizes an international conference on the study subject, participating and presenting interim or final results will be mandatory. All travel-related expenses must be covered by this grant award.

### Travel expenses

Only project specific travel expenses will be granted. A maximum amount of CHF 1,500 for one conference a year to present results will be covered. This amount includes the expenses for the AOCMF conference.

### Indirect costs

No overhead contributions are made to the submitting organization.

### Additional funding

Additional funding from any other source must be disclosed in detail. If other funding is available, it must be made clear how this will affect the overall budget of the project if the AO grant application is successful.

### Conditions of Contract

Prior to applying for this grant, please ensure with your legal department that the contract provided is acceptable to your institution. A sample contract for pre-clinical and clinical studies is embedded in this call on our website. Please note that the contract is not negotiable and AOCMF reserves the right to cancel the grant, should the contract not be duly signed in ink, by the PI and the Director of the project within two months after approval.

## Animal Model

If an in vivo animal model is used in the planned research work, please describe the model in detail. The description should include: anesthesia protocols, treatment protocols, pain management, surgical techniques, post-operative care, criteria for removal from the study if necessary, and euthanasia protocols.

The AO Foundation is committed to animal welfare and requires AAALAC standards in AO Foundation sponsored external research:

AAALAC Accreditation has to be provided if AAALAC accredited by either providing a copy of the AAALAC accreditation certificate or the certificate from your Federal or local authority, confirming that you meet the standards. If the applicant's animal research unit is not AAALAC accredited, the national accreditation has to be approved by AOVET. In case the applicant's animal research units is not national accredited, the form 'Animal Care Program Description for Non-AAALAC Facilities' has to be submitted.

Please see:

- a) AO Foundation Guiding Principles on Human Care and Use of Animals in Research and Education
- b) Institutional Research Animal Program Review Policy
- c) Animal Care Program Description for Non-AAALAC Approved Facilities

**Medical Devices**

Please note that any medical device development cannot be funded via this call. For medical device development, please contact AO Development Incubator. <https://www.aofoundation.org/Structure/innovation/AO-Development-Incubator/Pages/default.aspx>

The current CPP (Clinical Priority Program) call is not focused on product development.

**Notification**

The applicant will receive a confirmation e-mail from AOCMF within a week regarding receipt of the application.

**Decision**

Decisions will be communicated in May 2018. Applications should not be resubmitted unless the applicants are requested to do so.