

## MatRIC strategy 2016 – 2017

### The SFU initiative shall

- stimulate universities and university colleges to establish and develop academic communities that offer excellent education
- contribute to knowledge-based analysis and development of teaching and learning and that this underpins quality enhancement and innovation
- contribute to stronger interaction between higher education and the relevant societal and professional fields
- contribute to the sector-wide development and dissemination of knowledge and practices

### An SFU must therefore

- offer excellent R&D-based education
- develop innovative ways of working with R&D-based education
- encourage student engagement and ownership of learning
- contribute to the development and dissemination of knowledge and practices about the design of teaching and learning environments that are conducive to learning

*Extract from: NOKUT (2016). Awarding status as Centre for Excellence in Education (SFU). Revised version of 11<sup>th</sup> February 2016.*

This strategy document is based on and further develops the strategy put forward in the original proposal for MatRIC. This document will emphasize those areas where we now see that MatRIC needs to put more effort. The Work packages with tasks as described in the original proposal remains valid.

*MatRIC will stimulate universities and university colleges to establish and develop academic communities that provide excellent education by:*

- The continued provision of national events (workshops, colloquiums, symposiums, seminars and conferences).
- Inviting higher education teachers and researchers from other countries to Norway to report innovation, research and development.
- Supporting participation in national and international conferences that focus on research and development in mathematics teaching in higher education (INDRUM, SEFI-MWG, ICME, PME, CETL-MSOR, RUME).
- Developing MatRIC Networks (video, CAA, visualization & simulation, modelling, teacher education) and attracting teachers in Norwegian universities and university colleges to participate in and contribute to these networks.
- Supporting and initiating research and development based mathematics education at UiA so that UiA becomes a beacon for change in Norway.

*MatRIC will contribute to knowledge-based analysis and development of teaching and learning ... that underpins quality enhancement and innovation by:*

- Creating a stimulating context for the PhD and Post-doctoral fellows working within MatRIC, to engage with the international research and development in the field and supporting them and providing opportunities for them to present their research in local, national and international events.
- Stimulating masters students to take on MatRIC related research in their dissertation work.
- Continuing the ‘Small Research Grants’ arrangement.

MatRIC will *contribute towards stronger interaction between higher education and the relevant societal and professional fields* by:

- Continuing the MatRIC Open Lecture
- Accepting and creating opportunities to address teachers, school leaders and policy makers about (preparation for) studying mathematics at university.
- Accepting invitations to contribute to local and national agendas for improving higher education.
- Engaging with industry, business and research institutions to develop employment related educational opportunities for undergraduate and masters students.

MatRIC will *contribute to the sector-wide development and dissemination of knowledge and practices* by:

- Continued development of the MatRIC web pages, and use of MatRIC Newsletter.
- Use of other means of communication to the user community (e.g. INFOMAT. [alle@matematikknettverket.no](mailto:alle@matematikknettverket.no)).
- Being present at national and international conferences where HE mathematics teachers gather.
- Supporting MatRIC Networks in research, development and dissemination.

There are a number of areas that need special attention:

1. Student engagement.
  - MatRIC will develop student ‘user panels’. These will support in the evaluation of MatRIC’s actions and development of MatRIC’s programme.
  - MatRIC will support the development of an ‘elective’ module for students of STEM subjects based on the ‘PIC-Math’ programme in the USA – in which undergraduate students work on ‘real’ problems from industry and commerce.
  - MatRIC will develop student ‘peer-mentoring’ through the MatRIC Drop-in support centres.
2. Teacher education.
  - MatRIC will support Masters students to take on dissertation work related to the development of mathematical knowledge for teaching.
  - MatRIC will support the Teacher education network to establish a developmental project focused on enhancing teacher education students’ mathematical knowledge for teaching.
  - MatRIC will work with our collaborating partner NSMO to contribute to national efforts to improve the quality of teaching and learning mathematics.
3. Sustainability
  - MatRIC will seek to distribute ownership of MatRIC activities (e.g. annual conference, Drop-in support, MatRIC TV).
  - MatRIC will seek other sources of funding to support research and development based mathematics education in Norwegian universities and university colleges.

#### 4. Impact

- MatRIC will support research that will expose the impact of MatRIC's activities, within UiA and nationally.
- MatRIC will support research and scholarship that seeks to develop measures of excellence in teaching and learning (mathematics) in higher education.