

Faculty of Science and Engineering

Profile report: Teaching Tenure-Track Assistant Professor in Science Education and Communication with a focus on Citizen Science, and general knowledge of Public Engagement with Research.

- Discipline: Science Education/Communication
- Level: Tenure-track assistant professor
- Fte: 1,0 fte

1. Scientific discipline

Citizen Science is an important element of Public Engagement with Research. It serves as an interactive means of science education and communication, and co-constructing scientific knowledge across a wide range of science and engineering disciplines. Citizen Science can engage citizens in all phases of the research process; from agenda setting, through data collection and analysis, to creating impact.

2. Vacancy

This position will be embedded in the Institute for Science Education and Communication (ISEC). The criteria and conditions pertaining to the position are described in the document [‘Assistant professor with an education profile’](#).

3. Selection committee (BAC)

- Prof.dr. Lucy Avraamidou (chair), Director Institute for Science Education and Communication, Professor of Science Education and Communication, University of Groningen
- Dr. Henk A.J. Mulder, Programme director Master Science Education and Communication, Lecturer Science Communication/Coordinator Science Shop, University of Groningen
- Janke Prins, master student and member of the Programme Board Master Science Education and Communication, University of Groningen
- Prof. Arjen Wals, professor of transformative learning for socioecological sustainability, Wageningen University
- Dr. Anne Land-Zandstra, Assistant Professor in Informal Science Education, with focus on Citizen Science and Evaluation of Science Communication, University of Leiden.
- Dr. Eize Stamhuis, Associate Professor of Experimental Marine Zoology and Biomimetics, University of Groningen
- Prof.dr. D. Karastoyanova, Professor of Information Systems, University of Groningen.

4. Area of expertise

The Master Programme Science Education and Communication was established in 2002. In this period, a shift in focus occurred in the field: from transmission of scientific results, to dialogue and engagement *with* the public. Over recent years, further involvement of citizens *in* research (“citizen science”) has gained increased attention among researchers, policy makers and funders. This is reflected in the current strategic plan of FSE, which acknowledges that 'more and more, universities are expected to have an explicit impact on society: by preparing students for their professional life, by collaborating with societal partners in research projects, and by engaging the general public in their activities'. It is therefore important to train students in this field. This was echoed by the programme’s advisory board and the most recent audit of the programme. This training is also valuable for students in other programmes, e.g. environmental sciences.

In addition, citizen science offers a way to integrate disciplinary and science communication research, increasing its value for our students and responding to a recommendation from our recent audit, as currently both topics are in separate research projects. To prepare students for their professional career, citizen science will be scaffold in the curriculum by a brief introduction in all 2nd year BSc SEPA-courses, a new comprehensive 5 ECTS Citizen Science-course in the first MSc year and a 30 ECTS research project in the 2nd MSc year.

The candidate is therefore expected to bring expertise in the set-up, implementation and evaluation of citizen science projects in particular and public engagement activities in general, in science and engineering. The candidate is expected to have a demonstrable experience in or affinity with teaching. This complements the current expertise of the teams of ISEC, Science LinX and the Master program in Education and Communication.

5. Embedding Institute

The Institute for Science Education and Communication is an interdisciplinary, superdiverse research group with experts in science, mathematics, and engineering education and communication. The overarching goals of the Institute are the following: a) to contribute towards the quality of science and engineering education in schools and the university through the design, implementation and evaluation of theory-informed and evidence-based curriculum materials; b) To support the engagement of students and the general public with science and engineering in formal (e.g., university, school) and informal learning settings (e.g., science centers and museums). Areas of research interest and expertise include: community-based and after-school science engagement programs, training of teaching assistants in physics, innovative teaching practices in mathematics, the use of augmented and virtual reality in science, interdisciplinary approaches to teaching, the use of Artificial Intelligence in science education, as well as social, cultural, and gender issues in science. The candidate will contribute to the research area of public engagement with science and actively collaborate with Science LinX, the faculty’s Science Center, which coordinates Public Engagement and Outreach activities. Its Science Shop mediates research on behalf of civil society organisations (the agenda setting part of citizen science). Furthermore, the candidate is expected to set up collaboration with appropriate research groups and programmes at FSE.

6. Local and (inter)national position

Research staff at ISEC lead interdisciplinary projects funded by the EU Erasmus+ and Comenius programs and the EU Horizon 2020 program at the intersection of science and society. Through European funding, the team is involved in various international projects relating to public engagement, out-of-school science education, and citizen science (e.g., EU-H2020 OTTER, 2021-2024; EU-H2020 ENLIGHT-RISE 2021-2024; EU-Erasmus+ STAGE, 2022-2024). ISEC staff work in international collaborations across continents, but also with other research institutes at the Faculty, different groups in FSE and the wider University like ScienceLinX, the Aletta Jacobs School of Public Health, and local companies and NGOs.

ISEC, Science LinX and the master programme Science Education and Communication are collaborating in research, teaching and public engagement activities. Through various collaborations (e.g. the Aletta Jacobs School of Public Health, Forum Groningen) a network of citizen scientists is currently being established in the north of the Netherlands, through the CurioUs project, in collaboration with university researchers. Within the university, the team is actively involved in the Public Engagement pillar of the Open Science programme. Regionally, there is collaboration with schools and municipalities to support and execute measurements.

Internationally, the team is active in the European Science Education Research Association, the European Citizen Science Association, the European Network of Science Centres and Museums, the international Living Knowledge Network and the network for Public Communication on Science and Technology.

The candidate is expected to build upon existing networks and create new ones and play a central role in teaching and research related to public engagement with science with a focus on citizen science.

7. Expected contributions to teaching

The candidate will be actively involved in curriculum renewal of our programme for 2023-2024. Specifically, the candidate will develop and teach a new 5 erts course on Citizen Science (obligatory in the MSc SEC and elective for MSc EES) and give introduction lectures in other course units. The candidate will develop and supervise novel master research projects in and on citizen science (across FSE disciplines). As currently all the 30 erts research projects of our students are carried out and supervised outside of our programme, this is a major task.

The candidate will also teach in the course *Research Methods*. Depending on the background of the candidate, they are expected to teach in the master courses *Design for Science Education and Communication*, *History and Philosophy of Science*, *Science, Communication and Society*, and/or *Introduction to Science Communication* as part of the master programme 'Education and Communication'.

Whereas the candidate will start by teaching 'how to do and evaluate' Citizen Science, the use of citizen science as a *method* of science teaching receives more and more attention. The candidate will thus offer support to FSE staff to include citizen science as an innovation in their own teaching (teach the teachers). The candidate will also investigate options to further integrate citizen science as a teaching tool in the Teacher Training Programme (operated by the faculty of Behavioural and Social Sciences).

The candidate will actively collaborate with ISEC, Science LinX and the FSE research institutes, on

education development grants (i.e. Comenius and Erasmus+). The attention for citizen science in Horizon Europe and the Dutch National Open Science Policy and NWA/ NWO research funding options, next to the new open science policy of our university, will be beneficial to attract additional external (research) funding.

8. Expected contributions to research

The candidate is expected to extend their research experience in the sub-research area of public engagement with science. The research should lead to publications in top international journals. (Co)-supervision of PhD students is an important part of the envisioned research activities, as well as supervision of bachelor's and master's projects. Nationally as well as internationally, the candidate should maintain strong connections with other research groups in related areas. Within Groningen, the candidate is expected to form collaborations with researchers at ISEC for impact evaluation research studies, and designing curriculum materials, as well as with researchers at other institutes for the purpose of establishing interdisciplinary research-based citizen science projects. For this, funding should be obtained from e.g., Horizon Europe, Erasmus, NWA/ NWO and other funds such as Comenius.

9. Expected contributions to the organization

The candidate is expected to have an active interest and to provide a positive contribution to the management and organizational tasks of the institute. At the level of FSE, the candidate will contribute to the organization of the faculty, for example by participating in working groups and committees in the area of education and by supporting lecturers to make use of citizen science in their teaching. The candidate will participate in relevant national and international organizations.