Dnro 1528/01.01.03/2022
Saap. 2.5.2023

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Datum

May, 2nd, 2023

Expert's statement,

Associate Professor, Physical Geography (Tenure Track position)

at the University of Eastern Finland

Dear Mr. Junkkarinen,

dear colleagues,

thanks for your confidence in my valuation about the optimal suitability of the four candidates for your professorship in physical geography. You should be aware that I am not providing a "subjective" comparison, but a personal impression with an unavoidable individual bias.

In general, I think that all four candidates are highly competent, experienced, highly motivated and excellent scientists. They are all male persons and have a similar age, but their experience in physical geography stems from different research directions, research scales, methodologies, schools and comprehensions.

In order to suggest a suitability ranking of the four colleagues, I have used your description of the post, the provided internet-based materials, and the google scholar pages of these colleagues, their specific articles and their recent home pages in order to suggest a ranking with respect to my personal idea of a successful future physical geography. Within this idea, physical geography contributes to ecosystem-based solutions of the urgent questions of climate change and sustainable landscape development in an interdisciplinary strategy at different interrelated scales. The sub-discipline constructively utilizes the enormous potentials of geography to link human and

environmental systems, e.g. by applying the concept of ecosystem services, and to develop modern regionalizing methodologies basing upon remote sensing, geographical information systems, geo-spatial modelling or machine-learning techniques. I have distinguished three different viewpoints throughout the comparison of the 4 candidates. That are

(i) the outcomes of the evaluation of the delivered application materials with respect to the research and teaching plans,

(ii) the impressions based on the candidates' specializations and

(iii) the application of indicators for the candidates' past performances.

These aspects have been linked in a final suggestion, which also includes the demand for strategic decisions of the selection committee.

- ***(i) Impressions based on the formal applications and attachments***

These comments are based on the CVs, the research plans, the teaching experience and plans, the seriousness and the state-of-elaboration of the provided materials.

Focal elements of this aspect are the candidates' ***research plans***: Dr. Villoslada, who has already made experience in regional ecological analyses of Eastern Finland, is planning concepts and analyses of spatio-temporal biodiversity monitoring and applications of modern ecosystem service mapping and modelling approaches. Dr. Lopatin has proposed an interesting and comprehensive project about decarbonisation and related "domino effects" on forestry, the Arctic region, mining, tourism, and carbon markets, which is related to very high external funding contributions. Dr. Räsänen plans to investigate peatlands and tundra ecosystems with remote sensing techniques in order to evaluate human-induced changes, and Dr. Pawlik wants to carry out research on extreme wind events and landslides in Vietnam.

Within these concepts (that in general are described in a very optimistic manner, i.e. concerning the potential funding inputs), the approaches of Dr. Pawlik have a relatively small regional relevance while the concepts of the other candidates seem to fit well into the overall profile of the institute and its regional missions. Referring to my personal vision of future integrative physical geography, I would rank the comprehensive and interdisciplinary, but realistic concept of Dr. Villoslada at the first place, followed by Dr. Räsänen und Dr. Lopatin.

Concerning the ***teaching concepts***, all candidates have sufficient experience in academic teaching and supervision, and all of them have participated in higher educational courses and several methodological training activities. All candidates have formulated interesting and constructive targets and fundamentals for their teaching activities.

Dr. Villoslada has taught several international courses, mainly about ecosystem services, physical geography and geoinformatics, field and computer lab methods, environmental data bases, and GIS. Furthermoe he has contributed to the self-learning platform of the Baltic "Vivagrass Integrated Planning Tools". He has supervised 5 PhD and one 1 MS thesis.

Dr. Lopatin has been active in 13 courses with foci in forestry, GIS, forest remote sensing, forest management in Russia and Finland. He has made experience in thesis supervision by 5 BS theses, 4 MS theses and one PhD thesis.

Dr. Räsänen has accounted 11 courses in a spectrum from integrative methods in environmental social science to GIS, remote sensing, and methodological field courses. He has experience in supervision by 5 PhD theses and 14 MS theses.

Dr. Pawlik also has comprehensive experience in teaching different subjects within the canon of conservative physical geography, general geographical topics, geohazards, geomorphology, biogeomorphology, and geo statistics. He has supervised 1 PhD student.

The candidates do not show extreme differences, may be Dr. Pawlik's supervision experience can be titled "low" and may be the MS theses related supervision experience of Dr. Räsänen can give him some advantages in the teaching comparison. On the other hand, the Vivagrass platform provides positive marks for Dr. Villoslada, as this is a modern teaching adaptation to web-based university techniques.

Consequently, my order of rank arising from a study of the overall candidates' application materials with special accentuation on teaching and research concepts is:

Dr. Villoslada > Dr. Räsänen > Dr. Lopatin > Dr. Pawlik

- ***(ii) Impressions based on localizing the scientific foci of the candidates***

In this section, the basic questions were the following: Which sub discipline of physical geography has been the focus of the candidates, which are their experiences in quantification, mapping, GIS and geospatial modelling, which role can their work contribute to sustainable landscape development in peripheral areas and how strongly are they related to interdisciplinary approaches?

Dr. Villoslada's academic education is based on a LIC in Environmental Sciences in Spain and the degree Dr. of Environmental Sciences and Nature Protection from Estonia. His actual research focuses "on the use of multiple Earth Observation tools and machine learning algorithms to address the complex dimensions of ecosystem structures and functions and assess ecosystem services supply." Asked for his personal strengths, he replies: "Research and mentorship are two of my biggest passions in life. I am extremely dedicated, I enjoy my work, and I get highly motivated by the prospect of new research projects and ideas. I very much enjoy teamwork and developing project ideas with colleagues."

Dr. Lopatin has received a MS in Agriculture and Forestry in Finland and a Dr. in Forestry from Finland and Russia. His recent field of research encompasses "forestry; digitalization, remote sensing and GIS, drones, and AI for natural resources management". He describes his personal strengths as follows: "My dual doctoral degrees and exceptional teaching skills reflect my expertise and potential to excel in academia. My vast and innovative methodological knowledge in geospatial modelling, machine learning, big data, and data mining enables me to introduce advanced concepts that drive the department's research and teaching. My ability to secure €4,529,880 in external funding, a highly valued skill in academia, shows my capability to acquire resources and support for research projects."

Dr. Räsänen has a MS and Dr. degree in Evironmental Science and Technology and he has received a MS degree in Social and Public Policy from Finland. He assigns his field of research as "physical geography and environmental geoinformatics, remote sensing and spatial modeling research on boreal and arctic environments, e.g., related to vegetation and greenhouse gas fluxes." He describes his strengths as follows: "I have an extensive experience in physical geography and spatial research. I have utilized multiple geospatial modelling and machine learning methods in my research, in relation to remote sensing and other environmental big data sets. I am experienced in inter- and transdisciplinary science about socio-ecological systems. I am efficient and curious researcher and willing to develop novel and innovative methods and approaches. I am an experienced teacher and fluent both in English and Finnish."

Dr. Pawlik is a MS in Physical Geography from Poland and Dr. of Earth Sciences. Her defines his field of research in a general manner as "Earth sciences, Life sciences", and he illuminates his strengths as follows: "I have excellent experience incorporating knowledge of forest ecology and climate extremes into geomorphology."

Basing upon my personal concept of successful future physical geography, my order of rank arising from the candidates' scientific foci is the following:

Dr. Villoslada > Dr. Räsänen > Dr. Lopatin > Dr. Pawlik

- ***(iii) Impressions based on performance indicators***

During the last years, the evaluation of scientists has more and more become a mathematical calculation exercise, whereby the intensity of participation in the different categories may vary strongly.

Teaching

Concerning the teaching experience, Dr. Räsänen provides the highest numbers with 11 courses and 25 supervisions, while Dr. Pawlik has participated in 42 courses. However, this last number is based on different lengths and intensities of the single contributions. In my personal ranking, Dr. Räsänen is followed by Dr. Lopatin and Dr. Villoslada.

Teaching experience	Dr. Villoslada	Dr. Lopatin	Dr. Räsänen	Dr. Pawlik
No. of courses*	7	13	11	42
No. PhD supervised	5	1	5	1
No. MS supervised	1	4	14	0
No. BS supervised	0	5	6	0
Ranking proposal	3	2	1	4

* no distinction between minor participation and independent course operation

Papers

The scientific success is mostly derived from the number of articles or books that a person has successfully published. Also here, Dr. Räsänen provides much higher numbers than the competitors. From my viewpoint the H-index is the most reliable indicator because it also reflects the utility of the articles for the scientific community. Therefore, I would propose to rank the candidates according to these numbers. Also in this case, Dr. Räsänen is the top person, while Dr. Villoslada and Dr. Lopatin share the second position.

Papers published (and cited)	Dr. Villoslada	Dr. Lopatin	Dr. Räsänen	Dr. Pawlik
Refereed international journal papers	21	21	45	20
Other international journal papers	1	38	2	0
1st or 2nd author in papers	9	14	28	23
H-Index (google scholar)	11	11	18	14
Ranking proposal	3	3	1	2

Projects

The candidates have developed their scientific careers at different places with different academic environments and funding opportunities. Following the information from the applications, Dr. Lopatin and Dr. Räsänen have collected higher monetary sums than the other two candidates have.

Dr. Pawlik's application does not allow finding a respective number. On the other hand, Dr. Villoslada has contributed to a higher number of external projects than Dr. Räsänen; thus their experience in collaborating in bigger projects, e.g. funded by the European Union, may be valued in an equivalent manner.

Project experience	Dr. Villoslada	Dr. Lopatin	Dr. Räsänen	Dr. Pawlik
No. of projects participated	12	19	10	6
Additional funds acquired (€)	230.000	4.530.000	1.100.000	?
Ranking proposal	2	1	2	4

Summarizing, my order of rank

arising from the three classes of performance indicators is as follows:

Dr. Räsänen > Dr. Lopatin > Dr. Villoslada > > Dr. Pawlik

- ***Overall impressions and suggestions***

Taking into account all three levels of my personal comparison, (i) evaluating the delivered application materials with respect to the research and teaching plans, (ii) assessing the the candidates' specializations and (iii) applying indicators for the candidates' past performances, a modified picture arises. My overall order of rank concerning the suitability of the candidates therefore includes the following sequence:

Dr. Räsänen > Dr. Villoslada > Dr. Lopatin > Dr. Pawlik

Hereby from my very personal viewpoint, Dr. Pawlik mainly loses the competition because of his strong specialization in an interesting but not very relevant research topic. In addition, Dr. Lopatin is focussing strongly on forests and forestry, while the other two candidates are proposing landscape related research and teaching foci. I think that both of them Dr. Villoslada as well as Dr. Räsänen, can contribute to the high demands of human-environmental interrelation topics which are so important for future physical geography. In this context, Dr. Räsänen before all takes profit from his excellent performance indication. On the other hand, I can imagine that Dr. Villoslada could provide an extremely successful main emphasis of the institution on regional ecosystem service evaluation. Therefore, the next steps of the decision making procedure should – besides the important personal impressions - also include a discussion of the scientific targets of the overall institution.

Prof. Dr. Félix Müller

May, 2nd, 2023

Dnro 1528/01.01.03/2022
Saap. 10.5.2023

Faculty of Social Sciences and Business Studies
University of Eastern Finland

EVALUATION OF APPLICANT'S QUALIFICATION AND MERITS FOR THE ASSOCIATE PROFESSOR (TENURE TRACK) IN PHYSICAL GEOGRAPHY

I thank you for your confidence when you have asked me to compare the four applicants to the above-mentioned post. In the following, I first summarize the scientific achievements and merits of each applicant, then compare them and finally rank applicants in order of merit as I see appropriate. I only used information available in the electronic applications of the "SAIMA" application system.

- Evgeny Lopatin is Doctor of Forestry from the University of Joensuu (2008) and "Russian PhD" from the St. Petersburg State Forest Technical University (2011). His current work is senior scientist at Natural Resources Institute Finland (Luke). He has experience of also many other post-doctoral jobs (Finland, Russia, FAO). Lopatin has supervised some students (1 PhD, 4+5 undergraduates). He has completed eight pedagogical training courses in Russia and taught a total of 13 university level courses in different countries (forests, geospatial methods). He has served many academic positions of trust, such as reviewing research papers (15 different journals) and funding applications, and been the Vice Rector of Syktyvkar State University. He reports 19 successfully applied and coordinated projects, worth of ca. 4.5 million euro. He has 20 peer-reviewed articles (+ 14 in Russian-language), most of which focus on issues of forests and forestry, but there are also papers of soil carbon, solar activity variations and climate change. In English-language publications, he is the first author in about a third of them. The most recent publication is from 2021. His merits are strongly in methodological excellence (Earth Observation, Machine Learning and Geospatial Modeling). Lopatin's work plan emphasizes the need to decarbonize the global economy. He recognizes the interconnectedness of the many factors influencing on it, with special emphasis to the issues of forests and their management in the boreal zone, and permafrost and reindeer herding in the Arctic region. The plan contains four specific goals with many different methods, a list of eight expected results, and a plan to assemble a research group with a tentative assessment of foreseen publication and funding opportunities.

- Lukasz Pawlik is PhD from Wroclaw University Institute of Geography and Regional Development (2013). His current employment is Associate Professor in the University of Silesia. He has post-doctoral work experience from also other universities and countries (UK, Czech Republic, USA). His supervision merits are low (one PhD). He has taught a number of geographical courses in three different universities, and his teaching portfolio expresses passion. He has experience as a team leader/PI in several research funding projects and has received 12 awards for his scientific achievements. Pawlik reports 35 publications and he is the first author in most of them; with the 10 selected papers addressing the relationships between forests and diverse abiotic phenomena, such as wind damage, soil processes, landscape weathering and geomorphology. His research

plan style reads much like project application, with the two themes of extreme wind events in Europe and landslide geohazards in Vietnam. He plans to set up research teams on both themes and presents ideas for their funding. He foresees to publish a scientific method-oriented book. He plans to give lectures and organize workshops and seminars in the role he is applying for, as well as guide students at all levels.

- Aleksi Räsänen is PhD in Enviromental Science and Technology from the University of Jyväskylä (2014) and docent of Geography (UEF) and Environmental Policy (University of Helsinki). He is currently senior scientist at the Natural Resources Institute Finland, and has postdoctoral experience as a researcher at the University of Helsinki (also a period as University Lecturer) and the Norwegian University of Science and Technology. He reports four projects he has led as the PI (>million euro) in addition to seven group grants. He has studied university pedagogy at UHE, co-supervised 5 PhD theses and 14 MSc theses, and taught >10 courses in three different universities. Räsänen reports 46 peer-reviewed publications and he is the 1st author in over half of them. The ten highlighted publications are about climate/disaster risk/vulnerability/management, vegetation mapping and carbon balance; mostly in boreal forests and tundra. Räsänen has been the PI in two, and co-PI in two other projects, and instructed post-doctoral researchers. He has served in academic positions of trust, such as reviewing research papers (>100 reviews) and funding applications, and organizing events. According to his work plan, Räsänen would concentrate to the study of peatlands and tundra from the perspectives of 1) the spatiotemporal modeling of their natural processes and 2) analyzing their human-induced changes and governance. The planned work involves geospatial and machine learning methods. He anticipates opportunities for collaboration, ways to get research funding and setting up his own research team.

- Miguel Villoslada is PhD in Environmental Sciences and Nature Protection from the Estonian University of Life Sciences (2020), with earlier education in the Universidad de Alcalá. He is postdoctoral researcher at the University of Eastern Finland, researching (and teaching) topics like earth observation, machine learning, species distribution modeling and climate change (tundra ecosystems). Earlier, but sill after reaching PhD, he worked as a Chief Specialist in the Remote Sensing Lab of the Estonian University of Life Sciences. Villoslada has undertaken the course Learning and Teaching in Higher Education at University of Tartu, and taught several university-level courses on spatial techniques, ecosystems and physical geography. He has supervised five doctoral theses (and is co-supervising 5 others), one MSc thesis, and participated in PhD selection panels. His teaching portfolio is well thought and targeted for this job application. He has acquired some research funding, co-edited a journal issue, co-organized events and taken part in outreach. Scientifically, he focuses on the use of Earth Observation and Machine Learning in the study of ecosystem dimensions, functions and services. The topics of his 21 peer-refereed articles range from invasive species, reindeer herding and carbon dynamics to agricultural management practices. Many studies deal with wetlands, often in the subarctic zone but also including mangroves. The work plan is enthusiastic and forward-looking, with two interlinked research lines building on the themes of his previous studies. He presents ideas about setting up an own research team and obtaining research funding. He is keen to promote interactions with other research units.

In my view, all four applicants are qualified for the position of Associate Professor in Physical Geography. Their professional orientations resemble each other as all have solid and versatile knowledge and skills about geospatial analysis and advanced modelling, which they often

apply in more or less biogeographical studies (forests, wetlands, peatlands etc). Everyone is an active publisher and their articles are predominantly joint works with different partners depending on the subjects of the studies. The recent publication record of Lopatin has been weaker than that of the other candidates and his teaching may be least fit for this job. Everyone has merits of international collaboration and partnership, successful fundraising and the responsibility of PI.

Considering the broad field of Physical Geography, the research and teaching focus of Lopatin may be restrictive. Pawlik studies forests, as well, but merely from the perspective of how they are affected by various abiotic phenomena, as well as some geomorphological processes per se, which gives his approach a stronger geographical character. He is an active publisher and enthusiastic teacher of Physical Geography. His 12 awards are noteworthy. The scientific profile of Räsänen is rather similar but he has more merits in almost all subjects. His competence spectrum covers a broad part of the Physical Geography field, including climate, carbon, vegetation, landscape, disaster risk (flood, drought) and water management. Also Villoslada is relatively wide-ranging and he has good merits, yet not at the same level.

Based on the above, I would put Räsänen in first place, followed by Pawlich, Villoslaga and Lopatin. However, as all are good, I can also understand a solution whereby the nomination committee chooses interview them all for further information.

Any other information needed, I will be glad to be at your service.

In Turku, 10th of May of 2023

Risto Kalliola
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