

R E V I E W

by Dimitar Savov Dimitrov, Ph.D. – Professor, retired from the Faculty of Veterinary Medicine of Trakia University in city of Stara Zagora on the materials submitted for participation in a competition for the academic position of "Professor" at Plovdiv University "Paisii Hilendarski"

In the competition for "Professor", announced in the State Gazette, issue 92 of 18.11.2022 and on the website of the University of Plovdiv "Paisii Hilendarski" for the needs of the "Faculty of Biology", Department of "Developmental Biology", as a candidate participated only Associate Professor Elenka Stoilova Georgieva, Ph.D., Head of the Department of Developmental Biology.

1. General presentation of the received materials

The presented set of materials in paper and electronic media is in accordance with the Regulations for the Development of the Academic Staff of Plovdiv University "Paisii Hilendarski", and includes the following documents:

1. Application form to the Rector for admission to participate in the competition;
2. Autobiography according to the European model;
3. Diploma of higher education with acquired educational and qualification degree "Master";
4. Diploma for educational and scientific degree "Ph.D.";
5. Diploma for occupying the academic position "Associated Professor";
6. List of scientific papers;
7. Scientific works (photocopies of publications);
8. Certificate of compliance with the minimum national and additional faculty requirements;
9. Declaration of originality and authenticity of the attached documents;
10. Annotations of the materials under Art. 76. of the Regulations for the Development of the Academic Staff of the University of Plovdiv (RDAUP);
11. Self-assessment of contributions;
12. List of citations;
13. Document of employment experience;
14. Documents for study and teaching work;
15. Documents for scientific research activity;
16. Reference and documents in accordance with the additional requirements of the relevant faculty;

17. Other documents;

18. Set of documents on paper from point 1 to point 17; A set of documents from point 1, 2, 6, 8, 10, 11, etc., but in electronic format.

Subject:

A legal measure to review the documentation of the candidate for the academic position is order № RD-21-331 dated 15.02.2023 of the Rector of Plovdiv University "Paisii Hilendarski", for a member of the Scientific Jury for the competition for the academic position 'Professor' ' at the University of Plovdiv in the field of higher education "Natural Sciences, Mathematics and Informatics", professional direction "Biological Sciences (Morphology)", announced for the needs of the "Faculty of Biology", Department of "Developmental Biology".

The set of paper materials, presented by Associate Professor Elenka Stoilova Georgieva is in accordance with the Regulations for the Development of the Academic Staff of Plovdiv University, and includes the following documents: Application form to the Rector for admission to participate in the competition; Autobiography according to the European model; Diploma of higher education with acquired educational and qualification degree "Master"; Diploma for educational and scientific degree "Ph.D."; Diploma for occupying the academic position "Associated Professor"; List of scientific papers; Scientific works (photocopies of publications); Certificate of compliance with the minimum national and additional faculty requirements; Declaration of originality and authenticity of the attached documents; Annotations of the materials under Art. 76. of the Regulations for the Development of the Academic Staff of the University of Plovdiv (RDAUP); Self-assessment of contributions; List of citations; Document of employment experience; Documents for study and teaching work; Documents for scientific research activity; Reference and documents in accordance with the additional requirements of the relevant faculty; Other documents; Set of documents on paper from point 1 to point 17; A set of documents from point 1, 2, 6, 8, 10, 11, etc., but in electronic format.

The candidate, Associate Professor Ph.D. Elenka Stoilova Georgieva, has attached a total of **60 scientific papers** to the documentation provided to me for review, including: Scientific publications indexed in Web of Science & Scopus – 24 numbers; Monograph-habilitation thesis – 1 issue; Published book or collective monograph, according to indicator G8 – 1 item; Scientific works (19 items) other than those specified under indicator G7; Textbooks and teaching aids – 3 items; Scientific papers submitted for registration at the National Centre for Information and Documentation (NACID) – 22 pieces.

Observing the legislation of the Republic of Bulgaria, I will not review for this competition 7 scientific works that were presented and participated in a scientific competition for the acquisition of the Educational and Scientific Degree "Ph.D."

2. Brief biographical data (of the applicant)

The candidate for the competitive academic position was born on August 17, 1960. He graduated from the Unified Secondary Vocational School "P. Yavorov" in the city of Plovdiv. She acquired the qualification of a nurse and a semi-higher education after graduating from the Semi-Higher Medical Institute of the city of Plovdiv (1979-1981). After working for two years as a nurse in the former First City Hospital, and now St. Mina Medical Centre, she was accepted and studied at the Faculty of Biology of Plovdiv University "Paisii Hilendarski". He graduated with honors in 1991 as a Master's teacher in biology. In the period 1992-1993, she was a teacher in Primary School "Yane Sandanski" and in Primary School "Alehander Konstantinov" of the city of Plovdiv as a teacher of biology and chemistry, as well as only biology. From 1993-1994, she was a part-time assistant at the Department "General Biology" of Plovdiv University "Paisii Hilendarski". From 1994, until 1998, she was a full-time assistant in the same department of the Faculty of Biology. In the period 1998-2001, she was a Senior Assistant in the Department "General Biology" at the Faculty of Biology. From 2001 to 2010, she was the Chief Assistant in the Department of Developmental Biology, teaching in the fields of Embryology, Histology, Histopathology, Developmental Biology, and Human Developmental Biology. During the period 1998-2005, she successfully defended her dissertation work, as a result of which she obtained the Educational and Scientific Degree "Ph.D.". From 2010 until now, the candidate in the announced competition has been habilitated as an "Associate Professor" and is the Head of the Department of Developmental Biology at the Faculty of Biology of Plovdiv University "P. Hilendarski".

3. General characteristics of the applicant's activity

The teaching work of the candidate in the competition is in the field of Embryology, Histology, Histopathology, Developmental Biology, Human Developmental Biology, Cell Biology, and the scientific work is in the field of Histopathology, Environmental Toxicology, Biomarkers, Bioindicators, etc.

From the autobiography, attached in the documentation, it is clear that the applicant in the competition is fluent in English. She has indicated that she reads excellently in this language, and has a good command of it both written and spoken. From the same document, in the competition

materials provided to me, it is clear that she also speaks Russian, in which language her reading skills are excellent, and her writing and speaking in Russian are very good.

As for social and organizational skills and competencies, it is evident from the documents that she is the Head of the Department of Developmental Biology; She is the chairman of an Ethics commission for scientific research; She holds the position "Head of *vivarium*"; She is the coordinator of the master's program "Reproductive Biology"; She is the Deputy Chairman of the General Assembly at the Faculty of Biology of the Plovdiv University; She is the coordinator of a Doctoral program of Morphology, and she is the Deputy Chairman of the Ethics commission at Plovdiv University "P. Hilendarski". The candidate for the competitive academic position is a legal and active participant in the State Examination Commission (SEC) for the Bachelor's and Master's students. She organizes visits and training of students in *in vitro* clinics in the city of Plovdiv (New Live, Bora, Selena), as well as in the city of Sofia (Malinov, and Trust), and also in the city of Sofia and in the Institute of Reproductive Biology and Immunology (IRBI) to the Bulgarian Academy of Sciences (BAS).

For the presence of technical skills and competences, as well as working with computers, Associate Professor Elenka Georgieva points out the mastery of the computer programs MS Word, MS Excel, MS PowerPoint, Internet, Google Classroom.

The candidate's other skills and competencies include successful completion of training and holding a Certificate in "Protection and Humane Treatment of Experimental Animals Used for Scientific or Educational Purposes" held from the Trakia University, Stara Zagora. She is the Chairman of the "Biology" Section of the Union of Scientists in Bulgaria – branch city of Plovdiv. She is an active member of the Editorial board of the specialized scientific journal "*Journal of Bio Science and Biotechnology*".

The artistic skills and competencies of the candidate in the competition include playing the accordion, drawing, as well as metal engraving.

Assessment of educational and pedagogical activity

The repeated reading of the documentation submitted to me for review, what I noted in the short biographical data about the candidate confirmed my opinion that she is a fully developed and established pedagogue and teacher. Associate Professor Ph.D. Elenka Georgieva has not only been present for 32 years in Bulgarian education, but is an established factor in biology education for the Faculty of Biology of Plovdiv University "Paisii Hilendarski". This dedication of hers is in the fields of General Embryology, General Histology, General Pathology, Development of Organisms, and Human Development. In 2022, she managed to create as an independent author two textbooks

and a manual for her needs as a lecturer and leading practical training, and for her students, which she published at the University Publishing House "P. Hilendarski", city of Plovdiv - Textbook of General Histology, ISBN 978-619-202-812-1.; Textbook of General Pathology, ISBN 978-619-202-813-8 and Handbook of General Embryology”, ISBN 978-619-202-816-9.

According to the reference for the Additional requirements in the Faculty of Biology for the development of the academic staff, Assoc. Professor Ph.D. Elenka Georgieva has actively participated over the years in the preparation and procedures for accreditation of several academic disciplines and programs – Educational Qualification Degree (EQD) "Bachelor", specialty Biology; EQD "Master", specialty Reproductive Biology; Educational and Scientific Degree "Ph.D.", Doctoral program "Morphology". She participated in the Institutional Accreditation of the Department of "Developmental Biology" and in the preparation of documentation for the same department on the occasion of the accreditation of the Faculty of Biology in November 2012-2013.

The candidate for the academic position of "Professor" supervised four successfully defended doctoral students in the field of the competition.

Based on what I have noted above in this review, with inner conviction **on the educational-pedagogical activity indicator I give her my highest rating.**

Evaluation of the candidate's scientific and scientific-applied activity

Regardless of his real involvement in educational and pedagogical activity, Associate Professor Elenka Georgieva managed to appear in the scientific and applied sector as well. A significant number of titles of scientific publications are presented in the documentation attached to the competition for review, which is arranged by her in three groups.

The first group includes 24 titles of scientific publications in specialized scientific publications that are referenced and indexed in Web of Science and Scopus. In four of them, Associated Professor Elenka Georgieva is in first place, and is the lead author. She took second place in six of the scientific publications, included in this group. She is in third place in eight of the specialized scientific reports. She has been in fourth place three times, while she has co-author once in fifth, seventh and eighth place. I have to say that all twenty-four titles have an Impact Rank (SJR), the sum of which is 8,878. Nineteen of these publications are in journals which have an Impact Factor (IF). The total Impact Factor of these nineteen scientific publications is high and amounts to 34.053.

The second group of publications, identified by Associated Professor Elenka Georgieva, consists of nineteen scientific reports. First of all, as the lead author, the candidate in the competition is present in four scientific publications. The candidate also holds second position in

four scientific publications from this group. She is third, as a co-author on one publication. In seven publications from this group, she ranks fourth, in seven publications from this group, she ranks fourth, and in fifth place she is in three published scientific studies. Upon careful reading of the documentation, I found that, from the published in specialized scientific journals, nine scientific messages are indexed in Web of Science, and two of them in Scopus, while one of the articles also has an Impact Factor (IF) of 0.633.

The list of scientific works for registration in the National Centre for Information and Documentation (NCID) by the candidate in the competition, *representing the third group of scientific publications*, contains 22 titles of scientific publications in specialized journals. In six of them she is in first place, in two – she takes second place, in third place she is in only one publication, and in fourth place she is in four scientific publications. The candidate is in fifth place in author collectives in two publications, and in sixth place and further back – in 7 publications. I found that all 22 publications are indexed in Scopus, and the sum of their Impact Rank (SJR) is 34.800, and the Impact Factor (IF) of 18 of these scientific articles is 9.627.

All scientific articles presented in the competition are in English, there are no ones written in Cyrillic.

To *group of indicators B-B3. Habilitation thesis – monograph*, a copy is presented in the documentation, in which she is an independent author. Elenka Georgieva, 2022. "Application of dietary supplement PARA® in men with sub/infertility and men with varicocelelectomy", Fast Print Books Publishing House, Plovdiv, ISBN 978-619-411-3, in volume 281 pages.

Regarding indicator D8 – Published book chapter or collective monograph, Associated Professor Elenka Georgieva notes that 13 pages (from 267 to 280) are her authorship from Proceeding of the 50th Anniversary Conference "Biological Sciences for Better Future, "Ecological status of Topolnitsa River catchment area and Topolnitsa Dam" with author collective Yancheva, V., S. Petrova, I. Velcheva, E. Georgieva, 2012., University of Plovdiv, "Paisii Hilendarski " Press, ISBN 1312-052X.

The documentation contains a list of fourteen *research and educational projects*. Four of them are national and are financed by the Scientific Research Fund at the Ministry of Education and Culture of the Republic of Bulgaria, in which the candidate participates as a member of the scientific team. The projects financed by the Scientific Research Fund of Plovdiv University "Paisiy Hilendarski" predominate, and in four of them Associated Professor Elenka Georgieva is the head of the scientific project.

Over the past five years, the candidate in the competition has authored ten *reviews for specialized scientific journals* (*Eco toxicology and Environmental Safety; Environmental Pollution;*

Environmental Science and Pollution Research; Chemistry and Ecology; Biomedicine and Pharmacotherapy; Journal of Bio Science and Biotechnology, etc.).

In the previous part of my review, I noted that Associate Professor Elenka Georgieva was the supervisor of four successfully defended doctoral students (Vesela Slavcheva Yancheva, Stella Georgieva Stoyanova, Kostadinka Todorova Todorova and Radoslava Stoyanova Stoyanova). dissertations of her Ph.D. doctoral students.

The scientific research activity of Associate Professor Elenka Georgieva also includes the scientific supervision of fourteen graduate students. The competition documentation contains scanned copies of the title pages of all defended theses.

A list of participations in national and international scientific forums in the country and abroad of Associated Professor Elenka Georgieva for the period 2011-2022 is presented, which shows forty participations.

There is also a list of the candidate's participation in the competition as a member of twelve scientific juries for the acquisition of the Educational and Scientific Degree "Ph.D.", the Scientific Degree "Doctor of Sciences", competitions for filling the academic positions of Assistant Professor, Chief Assistant Professor, and Associate Professor. In four of them, she was the Chairman of the corresponding scientific jury.

My assessment of the candidate's scientific and scientific-applied activity is the highest, which I can give her.

Contributions (scientific, scientific-applied, applied) and citations

Contributions

In folder № 11 of the documentation provided to me for review, Associate Professor Elenka Stoilova Georgieva, in written form makes a self-evaluation of her scientific and teaching contributions. She classifies them into eight areas:

1. Contributions related to the application of a multi-biomarker approach for the analysis of changes in the gill and liver in representatives of fish from the *Cyprinidae* family under the influence of toxicants;

2. Contributions to the assessment of leptin, nerve growth factor (NGF) and adiponectin expression in women with metabolic syndrome;

3. Contributions to analyzing ghrelin as an ontogenetic factor and gastrointestinal hormone in the prenatal and postnatal period in rats;

4. Contributions related to the relationship between flow-mediated vasodilatation and some biomarkers of endothelial activation in patients with prehypertension;

5. Contributions related to the use of nutritional supplements to improve sperm status in infertile men and men with varicocelelectomy;

6. Contributions to the research of mussels as good bioindicators in toxicological studies and integrated monitoring programs;

7. Contributions in the field of osteoarthritis related to the study of serum leptin and resistin levels and the determination of the effect of certain drugs in mice with collagenase-induced osteoarthritis;

8. Contributions in the field of educational activity.

Regarding the *first direction*, without retelling what was written by the self-evaluator, I would like to point out that the different types of fish (carp *Cyprinus caprio*; flounder *Hypophthalmichthys nobilis*, Richardson, 1845; silver goby *Carassius gibelio*, as well as Caucasian goby *Knipowitschia caucasica* (Teleostei: Gobiidae) were tested with the active participation of the candidate in the announced competition and published as biomarkers for anthropogenically polluted freshwaters (taken from private reservoirs, micro dams and reservoirs, as well as in flowing waters - streams, rivers, etc.) with various "innocent" toxic reagents.

In the *second direction*, an article included in the scientific reports presented at the competition is cited, where, through a modern complex of immunochemical and immunohistochemical methods, the expression of leptin, nerve growth factor and adiponectin in women with metabolic syndrome was determined for the first time. The authors of this study, including the candidate in the competition, believe that leptin, nerve growth factor and adiponectin can be used as biomarkers to predict risks for the onset of metabolic syndrome.

In a *third direction*, it was established for the first time through immunohistochemical studies that ghrelin-producing cells differentiate in the embryonic development of laboratory rats and are expressed in the endoblastic epithelium of their embryos on the 12th day of gestation and in their fetuses on the 16th gestational day. Results for the presence of a ghrelin receptor in the earliest embryonic period of the laboratory rat are presented for the first time. In the embryonic period, receptor expression is in single endoblastic cells.

The *fourth line of contributions* relates flow-mediated vasodilatation to some biomarkers of endothelial activation in patients with prehypertension. Correlation between clinical chemical biomarkers, flow-mediated dilatation and prehypertension, and their role as predictors for new therapeutic approaches are recommended. According to the authors, early intervention and lifestyle

modification can improve endothelial function, increase flow-mediated dilation, and alter some levels of biomarkers of endothelial dysfunction.

By citing thirteen scientific communications included in the list of publications of the competition, the self-assessed candidate for the academic position of Professor, argues for the fifth line of contributions. She recommends the study of mussels – the zebra mussel *Dreissena polymorpha* (Pallas, 1771) as good bio-indicators in toxicological studies and programs for integrated freshwater monitoring.

The sixth line of contributions is related to the application of nutritional supplements to improve sperm status in infertile men and men with varicocele. Associate Professor Elenka Georgieva, in order to proceed with the decision to single out a direction with such a thematic orientation, is based on a scientific announcement and her monographic work, which I have already noted in my review. In both titles, she used as an experimental model the multicomponent nutritional supplement PARA®, reaching the conclusion that a synergistic effect is obtained when treated with combined therapy. In men who smoke nicotine cigarettes, the effect of intake is affected, with some dependence on the number of cigarettes smoked per day in the groups of men with varicocele and a more limited one in men with sub/infertility. She recommends using the experimental supplement for at least three months and for smokers for a longer time.

On the basis of three titles from the scientific publications present in the list of candidates for the current competition, the seventh direction of contributions is distinguished. These are contributions in the field of osteoarthritis and relate to the study of serum leptin and resistin levels and the establishment of the effect of certain drugs in mice with collagenase-induced osteoarthritis. New results are presented regarding the effects of metformin, alendronate and their combination on the development and progression of osteoarthritis in randomized experimental mice with collagenase-induced osteoarthritis. Treatment with metformin, alendronate and their combination reduces serum concentrations of leptin and resistin in the chronic phase of arthritis. The histological examination shows the positive effect of the applied treatment with metformin and alendronate, which makes their therapeutic use a useful approach for the treatment of patients with osteoarthritis.

For the eighth direction, I believe that the creation and publication of two textbooks on the disciplines "General Histology" and "General Pathology", as well as a manual for practical training in "General Embryology" can be called a contribution, but only for the needs of the various educational specialties.

Quotations

The documents submitted to me for review contain a separate folder, composed of 53 single-sided computerized paper pages, on which Associate Professor Elenka Georgieva presents a list of

cited scientific works noticed until 31.01.2023. The total number of citations is 407. Of these, 352 are indexed in Scopus & Web of Science. In a previous part of my review, I noted that the applicant's scientific articles submitted to me for review were in English. From the considerable number of citations, only 16 are written in Cyrillic (Bulgarian, Russian and Ukrainian languages), while all other citations up to 407 are mostly in English, but there are also some in Spanish, German, French and Portuguese). All citations, regardless of the language in which they are published, are printed in specialized scientific publications.

3. Evaluation of the candidate's personal contribution

To participate in the competition, Associate Professor Ph.D. Elenka Stoilova Georgieva submitted the relevant documents and materials, from which it is clear that she fulfilled the criteria for occupying the academic position "Professor" specified in the Regulations for the Development of the Academic Staff at Plovdiv University "Paisii" Hilendarski".

Minimum national required points (MNRP) by groups of indicators for occupying the academic position "Professor" in the scientific field "Natural Sciences, Mathematics and Informatics", professional direction "Biological Sciences".

A group of metrics	Content	Minimum national requirements (MINR) and points by groups of indicators for the position "Professor"	Points claimed by the candidate in the competition	Actual points of the candidate, according to the MINR
A	Indicator 1	50	50	50
B	Indicator 2	–	-	
C	A sum of indicators from 3 till 4	100	100	100
D	A sum of indicators from 5 till 10	200	403	403
E	A sum of indicator 11	100	704	704
F	A sum of indicators from 12 till 20	150	286.2	286.2
ALL POINTS BY INDICATORS A + B + C + D + E + F		600	1543	1543

The candidate in the announced competition for Professor of Morphology, with her teaching and research activities at the Faculty of Biology at Plovdiv University "P. Hilendarski" has made a personal contribution to the development of these institutions. She covers all the recommended criteria of Plovdiv University "P. Hilendarski", has a defended dissertation for the acquisition of the Educational and Scientific Degree "Ph.D.", scientific works in journals with an Impact Factor (IF) and Impact Rank (SJR) and without such, a horary of lecture hours, participation in scientific projects, participation in scientific conferences with international participation, etc. Participating in

teaching several disciplines of Bulgarian and foreign students, as well as in large-scale university activity is a reason for her to occupy the academic position of "Professor".

Summarizing the data from the materials presented by the candidate, I find that they far exceed the recommended evaluation criteria.

5. Critical remarks and recommendations

I have no critical remarks.

6. Personal impressions

I don't have any.

CONCLUSION

As I have already noted, the documents and materials presented by Associate Professor Elenka Stoilova Georgieva, Ph.D., comply with the Law on the Development of the Academic Staff in the Republic of Bulgaria (LDASRB), as well as with the Regulations for the Implementation of the LDASRB and the relevant Regulation of Plovdiv University "P. Hilendarski". The results achieved by Assoc. Professor Ph.D. Elenka Stoilova Georgieva in the educational and research activities fully correspond to the minimum national and additional requirements of the Faculty of Biology, adopted in connection with the Regulation of the University of Plovdiv "Paisii Hilendarski" for the application of Law on the Development of the Academic Staff in the Republic of Bulgaria (LDASRB).

After the repeated thorough acquaintance with the competition documentation provided to me for review, my analysis of their significance, and scientific and applied contributions, with all my inner conviction, I find it reasonable **to give my highest positive rating**. I propose to the respected Scientific Jury to prepare a report-proposal to the Faculty Council of the Faculty of Biology for the election of Associate Professor Ph.D. Elenka Stoilova Georgieva and for **her to occupy the academic position of "Professor of Morphology"** at Plovdiv University "Paisii Hilendarski".

Stara Zagora
April 9, 2023

Reviewer:.....
(Professor Dimitar Savov Dimitrov, DVM, Ph.D.)