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REPORT ON THE CAREER FORUM 2024: EVENT PLANNING, IMPACT AND REFLECTIONS ON PAST SUCCESSES AT THE FACULTY OF BIOLOGY

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Abstract. The Career Forum 2024 at the Faculty of Biology (BF) at Sofia University “St. Kliment Ohridski” (SU) was organized by the Faculty Student Council (FSC) with the support of the Career Center of BF and the Deans Council. The event took place on the vernal equinox on March 20/21. It introduced the Institutes of the Bulgarian Academy of Sciences (BAS), the Agricultural Academy (AA), and various business organizations, including Government institutions in the fields of biology, biotechnology, ecology and healthcare from across the country. Feedback from students and participating employers was overwhelmingly positive, reflecting the high quality of the event’s organization and presentations. This report aims to highlight the details of the event’s occurrence and its outcomes for all involved parties. Additionally, it seeks to review the history of similar events held at the BF over the years. Four major career-oriented events held between years 2016 and 2019, provided a solid foundation for improving the quality of impact on students and their future employers.

Keywords: biological sciences, biotechnologies, employers, methodology of biology education, professional realization, students

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The initiative of career-oriented events at the Faculty of Biology (BF) of Sofia University “St. Kliment Ohridski” (SU) began to take a more purposeful shape through the organization of Youth Scientific Conferences “Kliment’s Days” (YSC) in November. Motivated and inspired faculty members in the organizing committees kept on developing programs for young researchers, encompassing key biological fields such as Biological Diversity, Ecology, Environmental Protection and Sustainable Development, Molecular Biology and Biotechnology; and Biology Education (YSC-2012). Over time, the conferences expanded to include sponsors and collaborators from various national or international companies actively participating in the sessions (BF Conferences 2024).

In 2016, the YSC was organized for the first time with additional interactive panels devoted to career orientation (YSC-2016). One of them was BioFest-2016, where members of the faculty departments, together with interested students, created interactive stands to demonstrate to school pupils why biology is fascinating (BioFest-2016) (**Figure 1**)



Fig. 1. The poster of BioFest-2016 and the organization in the main hall on the first floor of BF. *“If you already love BIOLOGY or are just curious, come to us and you will find out how vast it is. We will show you why BIOLOGY is the science FOR life. Because life is biology. We will tell you why BIOLOGY is the science OF life. Because for every biologist it is the science of his life. Come, we will share with you our passion, our secrets... and something else”.* (BioFest-2016: <http://conf2016.biofac.info/biofest>).

The other important panel was the roundtable discussion titled “Career Development” which brought together BF students (bachelors, masters and PhD students) and employers from biology-related companies (Roundtable-2016). Representatives from Biovet, the Fund for Wild Flora and Fauna (FWFF), Fullbright, ProViotic and the University Botanic Gardens introduced students to their fields of work and career opportunities.

The next 2017 year, two YSC-associated Roundtables were set up – “Career Development” and “Trends in E-learning” (Roundtables-2017). In parallel, a Federation of European Biochemical Societies (FEBS) Workshop on Molecular Life Sciences Education was held (FEBS-2017) (**Figure 2**). Invited publishing entities, including Pensoft, Elsevier, Bulgarian Journal of Agricultural Science and “Bulgarian Science - Learn More” Journal, shared advice on writing scientific articles, conducting literature searches, and performing scientific communication. Additionally, the implementation of E-learning in primary and higher education was discussed.



Fig. 2. The poster of FEBS Workshop on Molecular Life Sciences Education alongside the Youth International Scientific Conference and a part of the informative presentation about writ

ing scientific papers from Elsevier in the Roundtable of Career Development 2017.

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In 2018, the BF career event was organized during the spring, in May, although it was still held under the scope of the YSC (Roundtable-2018). A total of 13 companies participated, including Chief Executive Officers and staff from managerial, commercial, and production departments of biotechnological and pharmaceutical companies (Vetprom/Vpharma, Biovet, Merck, Aquachim, Veolia, Sofia Zoo, PPD, National Genetic Laboratory, Bioregeneration Biobank, Teach for Bulgaria, Center for Applied Studies and Innovation (CASI), Centre of Microbial and Plant Genetics Belgium, European Scientific Council). They presented their activities in a lecture panel, followed by discussions with the students at their individual booths (**Figure 3**). During the same time period, a spectacular and vibrant outdoor BioFest-2018 was organized by BF members to promote biology among school pupils and the broader public (BioFest-2018-AM-TV).



Fig. 3. Footage of the report from Alma Mater TV of the Roundtable of Career Development 2018. (Roundtable-2018-AM TV: <https://youtu.be/PVs9eRIVwEw?si=a1WRRIf6ibGZnHAF>)

The Day of Career Development in May 2019 marked the first fully independent career event (Day of Career Development-2019). On one side, the faculty departments' members focused on presenting the Master's programs

through posters and brochures (**Figure 4**). The Career Center of Sofia University (SU Career Center) also took part with useful career guidelines. On the other side, 13 business companies participated in the event, including PPD, RIDACOM, Labimex, FOT, Sofia Zoo, Comac Medical, WWF, Bul Bio, Biovet, Vetprom, “Teach for Bulgaria”, C3i Solutions, Green Balkans (**Figure 4**).

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Fig. 4. Snapshots from the Opening of the Day of Career Development 2019, the booths of participating companies and departments of the BF in the courtyard and the lectures in the Aula.

The YSC organizers included BF, supported by the SU Fund of Scientific Research, the Scientific Research Department at SU, the Union of Scientists in Bulgaria, and the Students' Club “S.K.O.R.E.C.” at BF, in addition to the contributions of staff members and engaged diploma students, the role of the Faculty Student Council (FSC) proved to be invaluable. The FSC actively participated in creating artwork, applying for funding, and promoting career initiatives. Their official involvement contributed to developing a more attractive, constructive and impactful environment at each event.

From 2016 to 2023, the YSCs and their corresponding Roundtables, aimed to target undergraduate (B.Sc.), graduate (M.Sc.) and PhD students across three professional fields: Biological Sciences, Biotechnologies, and Methodology of Biology Education. Employers were carefully selected in alignment with these professional fields and contacted through face-to-face meetings, conversations

with alumni employed at the companies, phone calls, and e-mail correspondence. Each event provided a valuable opportunity for both foreign and Bulgarian scientists from diverse fields to network, fostering potential future collaborations and the exchange of experience. The organization of each event, which involved forming organization teams, inviting participants, designing the schedule, and preparing the venue, required between one and three months. Despite the lack of official statistics, approximately 50 students actively participated in each YSC on average.

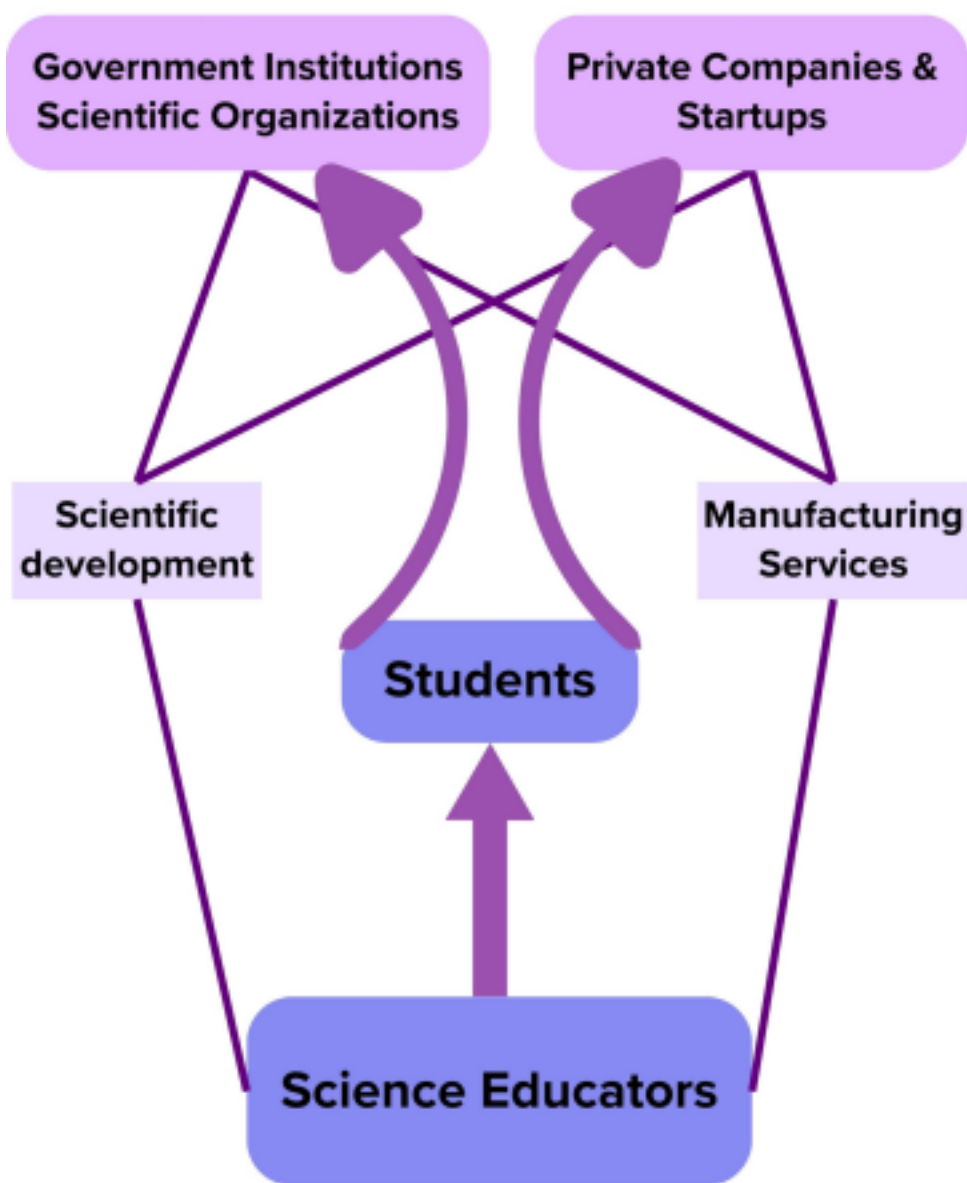


Fig. 5. The flow of specialized workforce and new knowledge in the context of career development and societal progress.

Estimates suggest that 50–90% of all students in the BF attended the career events, with M.Sc. students typically representing a higher proportion, likely due to their smaller cohort size. These events also attracted students from other faculties, such as Physics or Chemistry and Pharmacy, as well as from various scientific

institutions.

The organizers' motivation was driven by the objective of encouraging students to achieve higher career realization aligned with their higher education. This was complemented by a shared goal of making science publicly accessible and understandable, while fostering the practice of sharing experiences and ideas between students and scientists. Pursuing these goals aims to enhance students' professional ambitions to work as molecular biologists, ecologists, biotechnologists, or science teachers, and to demonstrate them the tangible opportunities for their efforts to be rewarded within our country (**Figure 5**).

The Career Forum 2024 is the result of an initiative aimed at addressing a problem identified by students in their final year of Bachelor's studies. Many of them had a vague vision for their future career and were left to conduct their own search into available opportunities. It is reasonable to assume that the pandemic not only disturbed the usual structure of university classes and workplace activities but also significantly impacted the organization of events of any kind. This led to nearly four years of stagnation in career development and orientation at the BF. The involvement of former FSC students during this period was largely limited to the public relations campaigns for the events held in 2018 and 2019. These factors further motivated the current FSC students to take action. In 2024, they organized an event designed to showcase as many opportunities as possible for students to realize their potential in various scientific fields.

For the second time since 2019, a career-oriented event in BF was held independently. The Career Forum was the first event in this series to be organized predominantly by students. The organization of the event began approximately two months before the selected dates. A total of 49 companies (including private laboratories and biotechnology-related businesses), 19 institutions, and 10 institutes of Bulgarian Academy of Sciences (BAS) were contacted. Of these, 39 accepted the invitation to participate, representing exactly 50% of the inquiries. Additionally, a career consultant from the "Career Development" Sector of SU responded to the invitation and participated in the event. The full table, List of Employers, with contacts of all scientific organizations and companies can be accessed by the link to the online system of education of SU (Career and Professional Development BF-SU 2024).

All confirmed participants were asked to send their presentations via email prior to the event to ensure seamless and efficient transitions between each presenter. Requirements and guidelines regarding posters and booths were also provided in advance to allow participants to prepare adequately. To manage communication via email, phone calls, or direct interactions, students were assigned as coordinators, each responsible for a few participants. Additionally, a

dedicated team was tasked with drafting and defending the funding project within the Diaphanum system, part of the Student Council of SU. This funding covered catering for both days of the event (**Figure 6**).



Fig. 6. Catering in front of the BF Aula from the opening until the end of the first panel and in the Exhibition Hall for the second panel.


 <h1>Program</h1> <h2>20.03.2024</h2> <p>Technical time for abstract presentation is indicated</p>	
<ul style="list-style-type: none"> ● First Panel - Aula of B6 (239 hall) 	<ul style="list-style-type: none"> 10:00 - 10:30 - Opening and Lecture for Career Consulting 10:30 - 10:40 - Stephan Angewalt Institute of Microbiology - BAS 10:40 - 10:50 - Institute of Neurobiology - BAS 10:50 - 11:00 - Institute of Plant Physiology and Genetics - BAS 11:00 - 11:10 - Institute of Experimental Morphology, Pathology and Anthropology with Museum - BAS 11:10 - 11:20 - Institute of Biophysics and Biomedical Engineering - BAS 11:20 - 11:30 - Institute of Organic Chemistry with Centre of Photochemistry - BAS 12:00 - 12:15 - Break 12:15 - 12:25 - Institute of Biodiversity and Ecological Research - BAS 12:25 - 12:35 - Institute of Molecular Biology - BAS 12:35 - 12:45 - Institute of Polymers - BAS 12:45 - 12:55 - National Museum of Natural History 12:55 - 13:05 - Joint Genomic Centre 13:05 - 13:15 - Botanical 13:45 - 14:00 - Break 14:00 - 14:10 - Sofia Regional Health Inspectorate - MH 14:10 - 14:20 - National Centre of Infectious and Parasitic Diseases (NCIDP) 14:20 - 14:30 - Sofia Zoo 14:30 - 14:40 - National Centre of Radiobiology and Radiation Protection - NH 14:40 - 14:50 - National Center of Public Health and Analysis - MH 14:50 - 15:00 - Municipal Enterprise for Waste Treatment 15:00 - 15:45 - Break ● Second Panel - Exhibition Hall (Salon 2) 15:45 - 16:00 - Exhibition of the booths
<h1>Program</h1> <h2>21.03.2024</h2> <p>Technical time for abstract presentation is indicated</p>	
<ul style="list-style-type: none"> ● First Panel - Aula of B6 (239 hall) 	<ul style="list-style-type: none"> 10:00 - 10:10 - Sepharra 10:10 - 10:20 - Ridzane 10:20 - 10:30 - Bivert 10:30 - 10:40 - Sofiyka Koda 10:40 - 10:50 - Olen & Orle 10:50 - 11:00 - Nasosono 11:30 - 11:45 - Break 11:45 - 11:55 - Bulbis - MOPO 11:55 - 12:05 - Thermo Fisher Scientific 12:05 - 12:15 - AgriBioScience 12:15 - 12:25 - OPIAB 12:25 - 12:35 - IQAA 15:45 - 16:00 - Exhibition of the booths
<ul style="list-style-type: none"> ● Second Panel - Exhibition Hall (Salon 2) 	<ul style="list-style-type: none"> 12:25 - 12:35 - IQAA 12:35 - 12:45 - Break 12:45 - 12:55 - 2442 Estate Winery 14:00 - 14:10 - Diachin 14:10 - 14:20 - Bio Tree 14:20 - 14:30 - Ministry of Education and Science 14:30 - 14:40 - Central Laboratory of Plant Quarantine - STSA* 14:40 - 14:50 - 2442 Estate Winery 14:50 - 15:00 - Chirana Copra 15:00 - 15:10 - Belgian Barcode of Life (BgBLI) 15:10 - 15:20 - GE Pharmaceuticals 15:20 - 15:45 - Break * STSA - Bulgarian Food Safety Agency

Fig. 7. The program of the two-day event.

The program of the Career Forum was structured in a way that the institutes of BAS were presented in consecutive blocks, followed by the institutions and companies. The scheduling took into account the availability of some scientific organizations after the conducted communication, ensuring that their presentations were arranged around the time frames when they were able to attend (**Figure 7**).

The operator of Alma Mater TV attended one of the event days to capture its essence. During the first panel, representatives from the organizing team were featured in the report through interviews. In the break before the second panel, interviews were conducted with presenters from scientific organizations and attending students (**Figures 8 and 9**). Students from the organizing team also participated as reporters in the video and assisted the editors in its production (Career Forum-2024-AM-TV).

The methodology of modern higher education requires active learning strategies. This is especially important for students in various organizations, as building competencies in event management, PR campaigns and communication, and teamwork necessitates learning from each other and through the process itself. Active students, in turn, inspire their educators by motivating them to share valuable practices and insights. This creates a positive ecosystem of collaboration and constructive dialogue, fostering better outcomes and transforming the mindsets of everyone involved.



Fig. 8. Footage from the Aula of BF during the presentations.

Taking the methodological approaches into account, a campaign to gather feedback was planned. Guest-participants were provided with two copies of questionnaires: one addressing the quality of education at the university and the other focusing on their requirements when hiring young research the scientific

organizations, 33 gave feedback. The results were compiled into a collection of opinions regarding the professional fields in BF. The feedback from the participants about the event

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Fig. 9. Footage from the booths in the Exhibition Hall of BF.

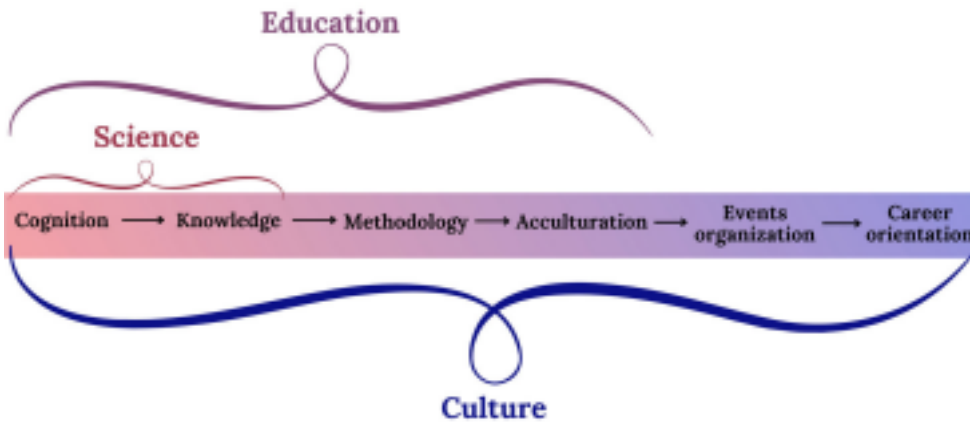
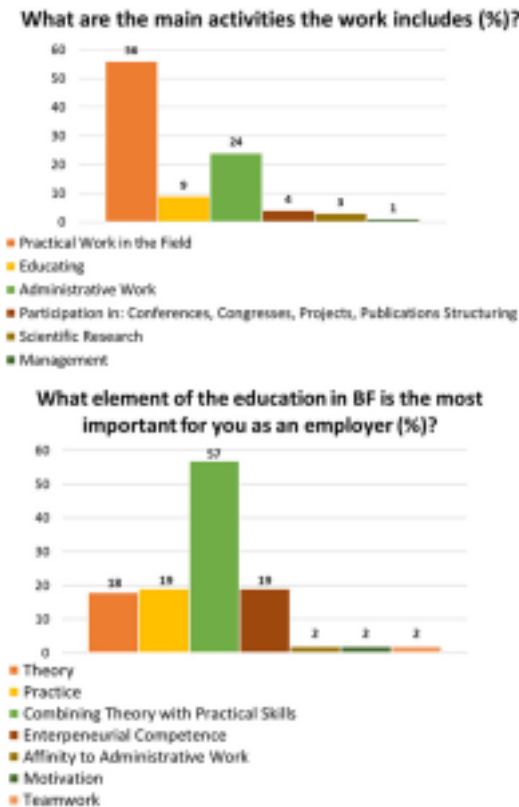


Fig. 10. Links between science, active education and career development.

and the level of preparation of BF students was generally positive. According to the responses, over half of the roles involve practical work in their respective fields, while a quarter pertains to administrative tasks. Nearly 9% is related to education, with the remaining 8% encompassing management, research, participation in

conferences, and other activities. Notably, 57% of the answers pointed to the combination of theoretical knowledge and practical skills as the most crucial factor in students' education. In contrast, attributes such as teamwork, motivation, and affinity for administrative work were considered the least significant (**Figure 11**).



On the other hand, when hiring, the surveyed employers considered creative problem-solving, teamwork skills and students' performance during interviews, as the most important factors overall (**Figure 12**).

Over 40% of the responses rated the quality of education and theoretical preparation of young scientists at the BF as excellent.

Nearly 40% rated the practical preparation and individual task solving skills as excellent, while 30% rated them as good. Motivation for professional development was rated as excellent in 31% of the answers and as good in 16%. More than half of the total respondents expressed positive feedback regarding all suggested types of collaborations with the university – with the highest interest shown in student internships (**Figure 13**).

Fig. 11. Description of the general nature of the work in scientific organizations and the most valued qualities in students among all those listed.

There were some answers to the open

question: “What are your suggestions for developing the professional education field?”:

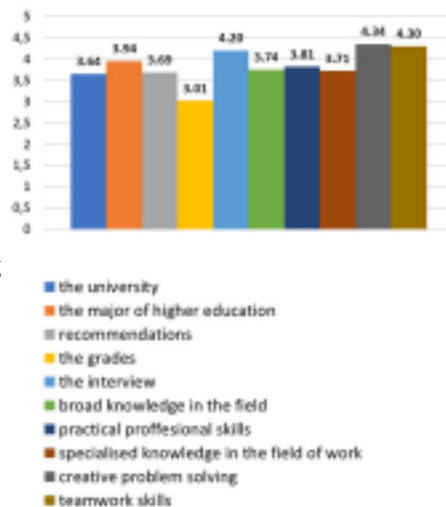
- “The education needs to include giving knowledge and practical skills linked to the newest achievements in Biotechnology, for example working with cell cultures, GMO, recombinant proteins, etc. Interdisciplinary approach – incorporating not only the biological aspects, but also engineering, chemical and information technology.”
- “Spending more time on discussing and critiquing scientific publications for acquiring theoretical and practical insight of the modern scientific research. Incorporating more practical terrain and laboratory exercises.”
- “The Biotechnology program is developing well. In the Institute there is one Bachelor student who is well prepared theoretically and practically.”

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- “Higher criteria for assessment of the students. Better incorporation of the link between theory and practice in the education process.”
- “There are financial instruments for creating opportunities for students if good communication is maintained. Theoretical material should be reduced in favor of practice; emphasizing the positives and opportunities in our educational system; better informing the students and keeping a friendlier atmosphere.”

The feedback from the survey respondents among the students (76 replies) showed high interest and satisfaction. According to 100% of them, the event was useful and informative. For 92.11% of the students, all their questions were answered. Additionally, 98.68% expressed interest in attending a similar event next year. Of the responses, 61.84% were strictly positive, stating that the event helped orient them toward a specific organization. Next, 61.6% of the ratings about the general impression of the event were the highest score (5) and 28.8% were the second highest score (4). The organization of the forum was rated 5 by 76.3% of the respondents.

When hiring, to what extent do you consider the factors (1 - 5):



Among the students who attended and rated the presentations in the first panel, 46.6% gave a score of 5, while 43.8% –gave a score of 4. The second panel, which included discussions and

Fig. 12. Evaluation of the importance of each student quality in employment consideration (values represent an average score).

demonstrations, was rated 5 by 63.2% and 4 by 26.3% (**Figure 14**). There were also suggestions for other potential employers to be invited for the next Career Forum, including Comac Medical, "Cibalab", "Ramus", "Kandilarov" labs, Inna Essentials, Damascena, Vodoraslo, WWF, Gosmile, Bulgarian Society for the Protection of Birds, other private schools and companies.

The following citations are the answers to the question "What else can you share from your impression of the event?":

- "Thank you for organizing the event, it was really helpful as it showed me more opportunities for growth after my education, because I am not sure in which discipline I would like to get in yet. Looking forward to the second day of the forum!"
- "Compact effective organization and a big spectrum of companies in the different fields of Biology. Well done job!"

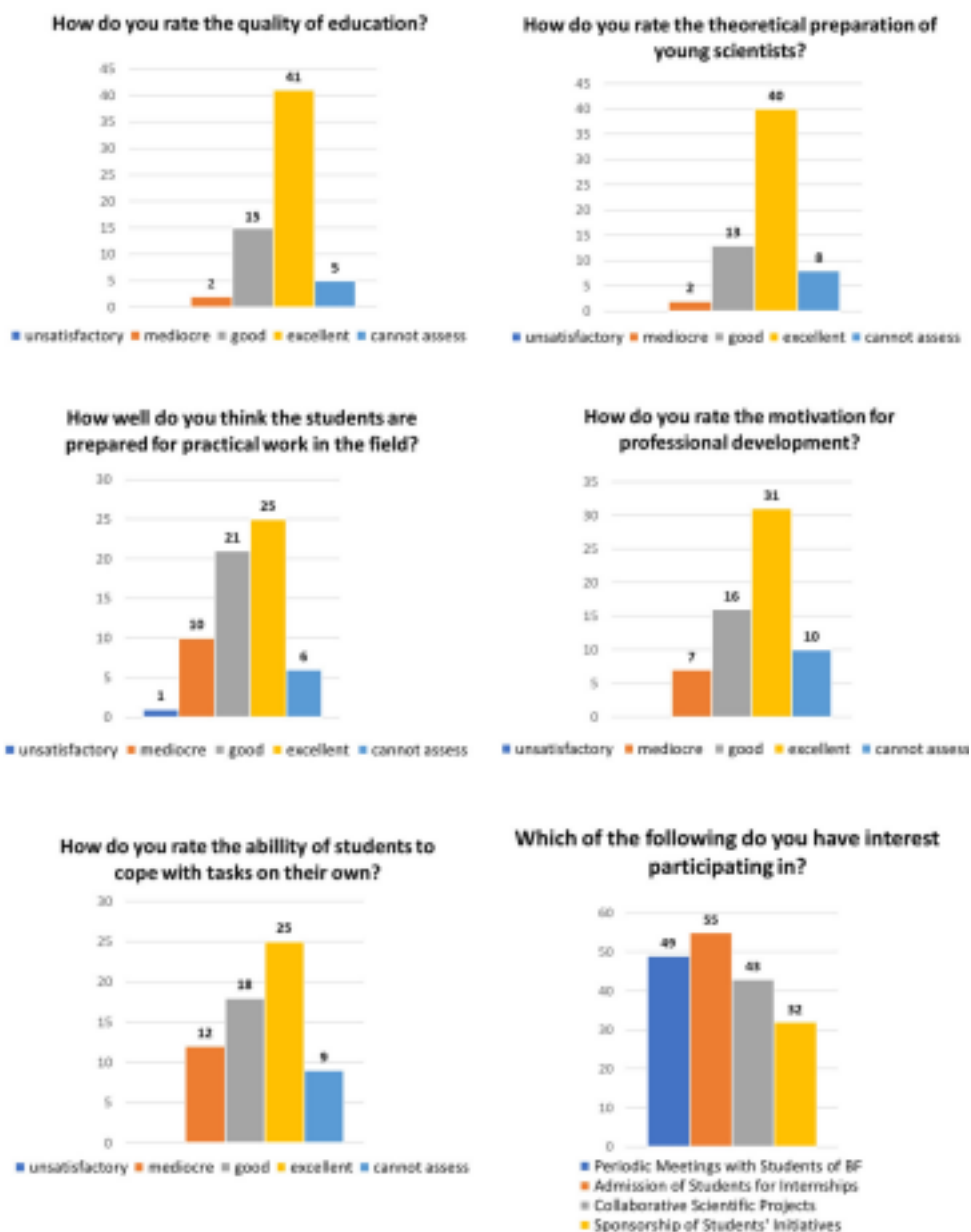


Fig. 13. Evaluation of different education aspects in BF and students' qualities according to the employers.

- “The students should be dismissed from lectures in the time period of the forum and the presentations should be more oriented towards internships for Bachelors.”

- “Some of the companies need to be more specific about what their activities include and what qualities do they search for in a new candidate.”

Such initiatives are highly beneficial

and encouraging for students and all participants. Career forums are events that bridge the gap between higher education institutions and the labor market. In line with modern university trends toward student-centered education

that guarantees the acquisition of both subject-specific and broad competencies,

future career forums should present the

full range of professional opportunities

for our students: from academic research, to teaching science options and business start-ups and spin-offs. These forums should also encourage students to pursue their professions.

It is also of great importance to encourage students to actively participate in such conferences and career forums,

allowing them to both connect with the scientific community and explore work placement opportunities. A well-executed advertising campaign would certainly enhance the positive outcomes of such career and scientific events. As more companies agree to participate, others would also be attracted, increasing the credibility and popularity of our events. Thorough management and detailed organization are essential for their success. The interest and desire for a future career forum demonstrate that the organizing parties have addressed the key aspects needed for a productive gathering of people in the science field. Involving active students in organizing the event contributes to its usefulness and significance, showing all students in the faculty the potential perspectives for their future careers. While it requires a great deal of effort to bring all these ideas to life, the results are certainly worth it.

Ratings of different components of Career Forum 2024

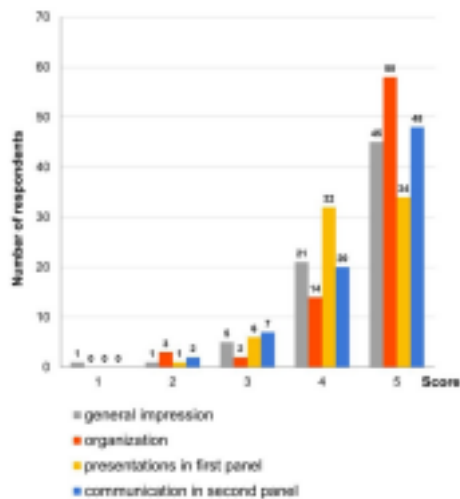


Fig. 14. Evaluation of main elements in the Career Forum by the attending students.

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CONFLICT OF INTERESTS

The authors declare that there is no conflict of interests regarding the publication of this article.

AUTHOR CONTRIBUTIONS

Y.Y.G. and Z.D.Z. designed and wrote the manuscript. M.Y.G., L.S.N., T.P.K., M.K.Z., D.R.T., I.K.R., D.P.N., V.S.M. contributed to adding information and improving the manuscript.

References

- BF Conferences 2024. https://www.uni-sofia.bg/index.php/bul/universitet_t/fakulteti/biologicheski_fakultet2/konferencii (Last accessed 10th November 2024)
- BioFest-2016: <http://conf2016.biofac.info/biofest> (Last accessed 10th November 2024)
- BioFest-2018-AM-TV: <https://www.youtube.com/watch?v=oufHl2GzocM&list=PL0DFOut4n6AZbCchE8KfHrhJfvIPhURP2&index=133> (Last accessed 1st November 2024)
- Career and Professional Development BF-SU 2024: <https://elearn.uni-sofia.bg/course/view.php?id=111538#section-8> (Last accessed 5th November 2024)
- Career Forum-2024-AM-TV: <https://youtu.be/ucGkNFJaTQ?si=DUMXFfSuzEtgi6lDA> (Last accessed 10th November 2024)
- Day of Career Development-2019: https://www.uni-sofia.bg/index.php/bul/novini/novini_i_s_bitiya/den_na_kariernoto_razvitie_v_biologicheskiya_fakultet (Last accessed 10th November 2024)
- Faculty Student Council: https://www.facebook.com/FSSpriBF/?locale=bg_BG (Last accessed 10th November 2024)
- FEBS-2017: <http://conf2017.biofac.info/index.php/en/febs-workshop> (Last accessed 10th November 2024)
- Rountable-2016: <http://conf2016.biofac.info/kragla-masa-karierno-razvitie> (Last

accessed 10th November 2024)

Rountables-2017: <http://conf2017.biofac.info/index.php/en/> (Last accessed 10th November 2024)

Roundtable-2018: <http://conf2018.biofac.info/index.php/bg/roundtablemenu> (Last accessed 10th November 2024)

Roundtable-2018-AM TV: <https://youtu.be/PVs9eRIVwEw?si=a1WRRIf6ibGZnHAF> (Last accessed 10th November 2024)

SU Career Center: <https://www.facebook.com/careercentersu> (Last accessed 10th November 2024)

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YSC-2012: <http://klimentovi-dni.biofac.info/> (Last accessed 10th November 2024) YSC-2016: <http://conf2016.biofac.info/> (Last accessed 10th November 2024)

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