

Anexa nr. 1 – Cerere de premiere*

1. Candidat

Nume: Vodnar

Nume anterioare (dacă este cazul):

Prenume: Dan Cristian

Doctor din anul (se prezintă copie a diplomei de doctor sau echivalent): 2010

Poziția ocupată: Prof. dr.

Instituția: UNIVERSITATEA DE ȘTIINTE AGRICOLE SI MEDICINA VETERINARA CLUJ-NAPOCA; Facultatea de Știința și Tehnologia Alimentelor

Telefon mobil:

Adresa de e-mail:

2. Ediția “Gala Cercetării Românești”: 2024

3. Premiul și categoria pentru care aplică (individual sau echipă de cercetare): Biotehnologii – Premiul “Gheorghe Ionescu-Șișești”, categoria echipă de cercetare.

4. Lider de echipă, dacă este cazul: Da

5. Componența echipei de cercetare, dacă este cazul (numele membrilor echipei, poziția ocupată, anul ultimei diplome acordate):

The research team was formed gradually starting in 2016, and currently there are 13 members – including the leader (prof., assistants professors, researchers, and doctoral students). The list of research team members with professional profile link/member is described below:

Team Leader - Prof. dr. Dan Cristian Vodnar - doctorate degree obtained in 2010.

<http://danvodnar.ro/> <https://orcid.org/0000-0001-5407-8071>

1. Asist. Prof. dr. Lavinia Florina Calinoiu – doctorate degree obtained in 2020.

<https://orcid.org/0000-0002-0198-0472> - ORCID

2. Asist. Prof. dr. Laura Mitrea – doctorate degree obtained in 2020.

<https://orcid.org/0000-0001-5232-7978>

3. Asist. Prof. dr. Martau Gheorghe Adrian – doctorate degree obtained in 2021.

<https://orcid.org/0000-0001-8220-1030> - ORCID

4. Scientific Researcher II - Szabo Katalin – doctorate degree obtained in 2015.

<https://orcid.org/0000-0002-6872-9557>

5. PD Project Director and 2nd year Ph.D. student (Second Ph.D.) – dr. Teleky Eموke Bernadette – 1st doctorate degree obtained in 2016.

<https://orcid.org/0000-0003-3672-8717>

6. PD Project Director – dr. Bianca Eugenia Ștefănescu - doctorate degree obtained in 2021

<https://orcid.org/0000-0001-8916-6493>

7. 3rd year Ph.D. student- Silvia Amalia Nemes – master's degree obtained in 2020

<https://orcid.org/0000-0001-5103-2529>

8. 2nd year Ph.D. student- Rodica-Anita Varvara - master's degree obtained in 2022.

<https://orcid.org/0000-0002-5730-8538>) - ORCID

9. 3rd year Ph.D. student – Calina Ciont – master's degree obtained in 2021.

<https://orcid.org/0000-0001-5284-0683>) - ORCID

10. 3rd year Ph.D. student - Diana Plămadă – master's degree obtained in 2019.

<https://orcid.org/0000-0001-5697-5059>

11. 2nd year Ph.D. student – Ana-Maria Cocean - master's degree obtained in 2016.

<https://orcid.org/0000-0001-8115-8480>) - ORCID

12. 3rd year Ph.D. student - Mihaela Ștefana Pășcuță - master's degree obtained in 2018

<https://orcid.org/0000-0002-0983-5704>

6. O descriere a celor mai importante realizări științifice din ultimii 5 ani (max. 4 pag., format A4, caractere Times New Roman, 12 puncte, spațiere între linii de 1,5 și margini de 2 cm)**.

Dan Vodnar's achievements have been mostly derived from the field of bioeconomy with the final aim of increasing awareness about waste fermentations for health, economy, and environment (more than 15 years of fermentation experience in the laboratory). This topic greatly impacts worldwide due to the importance of finding substitutes for essential micro/macronutrient and bioactive sources. In particular, he was involved in submerged and solid-state fermentation and characterization of wastes/biotechnologically derived compounds, using methods that can provide information about metabolites under different conditions. The research directions focus on *i) Bioconversion of waste into valuable organic chemicals; ii) Microalgae and Probiotic biomass production; iii) Active packaging and edible film formulation;* **Starting with 2019**, every year, ELSEVIER BV and Stanford University consistently recognized Dan Vodnar in the *annual World Ranking of Top 2% Scientists in food science*. For 2022, the candidate was also included in the **opera omnia category** (for the entire career). This prestigious acknowledgment has served as a testament to his dedication and contributions to the field. Furthermore, in 2022, he was elected as a member of the esteemed **Academia Europaea (where 80 Nobel laureates are members)**, further validating his expertise and standing within the academic community. Moreover, the last 5 years achievements also include a list of patents (5 patents and 3 patent applications) detailed also in point 10 of the present application.

In december 2022, the team leader (together with 4 team members) received from the **Romanian Academy the award "Traian Săvulescu – Domeniile Biologie, Fitopatologie, Biotehnologie, Știința Alimentului. Secțiunea Științe Agricole și Silvice"**, for: Removal of bacteria, viruses, and other microbial entities by means of nanoparticles. Authors: Dan C. Vodnar, Laura Cot (Mitrea), Lavinia Florina Mureșan (Călinoiu), Katalin Szabo și Bianca Eugenia Ștefănescu (Vodnar). Bucharest, 7 dec. 2022, Aula of Romanian Academy. **Other distinguished awards are:** JCI Ten Outstanding Young Persons" (TOYP). Category: Scientific, Technical, 2018; „Cinstea Maramuresului”, Distinction, Cinstea Maramuresului Gala 2018, Maramures County Council, Edition I, 2018; Gold Medal, International Invention Exhibition, Geneva, Switzerland, 2017.

The candidate has a total number of publications of 256 (66 are in Q1 indexed journals according to AIS). In the last 5 years, Dan Vodnar reached 159 publications among which 55 are Q1 indexed journals according to AIS. Cumulative influence score A, calculated as the sum of the weighted influence scores related to the articles published in the last 5 years (where the weighted influence score related to an article is defined as the influence score - AIS related to the article related to the number of authors of the article) is of **42,057. Remarkable Scientometric Indicators: H-index and citations (WOS) - 45 H-index, 5169 citations without self-citations (an average of citations per publications 20.19); h-index and citations (Google Scholar) - 55 H-index, 9960 citations.** In 2022, Dan Vodnar (together with the research team) published 20 scientific articles in prestigious international scientific journals ranked in Q1 and Q2, having a **cumulative impact factor of 104.57 only in a single year.** Among the journals in which

these articles were published are: **Scientific Reports-Nature (5th most cited journal)**, **Trends in Food Science and Technology (I.F. 16.002-first position in domain)**, **Critical Reviews in Biotechnology (I.F. 9.062)**, **Food Chemistry (I.F. 9.231)** etc.

The international and national impact of the published articles is reflected in the number of citations obtained, respectively 7 of the articles (detailed in point 9 of the present application) are classified as "**Highly Cites Paper (top 1% most cited in the field)**", including 1 article "Hot Paper" in 2019 (Top 0.1% the most cited article in the field), according to Web of Science (detailed in point 9 of the present application), and in the quality of the citations, whereas 10 of the most relevant citations are: 1) [Nature reviews](#) IF- 88.1 category Q1; 2) [Cell Host & Microbe](#) IF- 30.3 category Q1; 3) [Trends in Biotechnology](#) IF- 17.3 category Q1; 4) [Biotechnology Advances](#) IF- 16 category Q1; 5) [Trends in microbiology](#) IF- 15.9 category Q1; 6) [Trends in Food Science & Technology](#) IF- 15.3 category Q1; 7) [Comprehensive Reviews in Food Science and Food Safety](#) IF- 14.8 category Q1; 8) [Critical reviews in food science and nutrition](#), IF- 10.2 category Q1; 9) [Critical Reviews in Food Science and Nutrition](#) IF- 10.2 category Q1; 10) [Current Opinion in Food Science](#), IF- 9.9 category Q1.

In the last 5 years, the candidate published 9 chapters in international books at the Elsevier Prestigious Publishing House (detailed in point 8 of the present application). In 2022, the leader launched [Echibiotic](#), a symbiotic product based on the candidate research, produced, and sold exclusively by the university, demonstrating the candidate's ability to bring breakthrough innovations to market.

In the last 5 years, the project leader succeeded to receive funding for 6 international research projects (min. 100.000 euro each) and 6 national research projects (min. 100.000 euro each). The total funding attracted via international research projects is 2.189.069 euro and the total funding attracted via national research projects is 4.421.013 euro. The projects list is detailed in point 9 of the present application. The leader transferred the research services to the economic partners via research and consultancy contracts, as follows: Health Laboratory, 2022; TRM Supplements, 2022.

The candidate (team leader) is Editor-in-Chief for the Bulletin of University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca- Food Science and Technology which has an impact factor of 0.7). Moreover, the candidate (together with the research team) is Invited Editor to coordinate special issues/research topics belonging to prestigious ISI journals, namely: *Microorganisms* (Q2, I.F. 4.92), *Foods* (Q1, I.F. 5.2), *Catalyst* (Q1, I.F.4.2), *Frontiers in Nutrition* (Q1, I.F. 6.59), *Frontiers in Public Health* (Q1, I.F. 5.2), *Frontiers in Microbiology* (Q2, I.F. 5.2), *Journal of Food Quality* (Q3, I.F. 1.76), *Frontiers in Sustainable Food System* (Q1, I.F. 5.00), *Frontiers in Bioengineering and Biotechnology* (Q1, I.F. 5.7), *Food Chemistry* (I.F. 5), *Food Characterization*. These are: Topic Editor - Research Topic "[Nutrition and Sustainable Development Goal 9: Industry, Innovation, and Infrastructure](#)" *Frontiers in Nutrition Journal*; Topic Editor - Research Topic "[Sustainability in the Food Chain](#)" *Frontiers in Sustainable Food Systems*"; Topic Editor - Research Topic "[Organic Waste and By-products: Derived Compounds as Functional](#)

[Agents from Fermentation Processes](#)"; Review Editor - Section: "[Public Health Policy](#)" - [Frontiers in Public Health](#); Review Editor - Section: "[Microorganisms in Vertebrate Digestive Systems](#)" [Frontiers in Microbiology](#); Review Editor - Section: "[Bioprocess Engineering](#)" [Frontiers in Bioengineering and Biotechnology](#); Guest Associate Editor - Section: [Frontiers in nutrition - Food Chemistry](#); Guest Associate Editor - Section: [Frontiers in food science and technology - Food Characterization](#); Guest Associate Editor - Section: [Frontiers in food science and technology - Nutrition and Food Science Technology](#); Guest Editor Special Issue in [Catalyst Journal "Current State-of-the-Art of Biocatalysts in the Food Sector"](#) Guest editor Special Issue, [Microorganisms MDPI "Food Fermentations"](#); Guest editor Special Issue, [Journal of Food Quality "Microbial Production of Naturally Occurring Reduced-Calorie Sweeteners"](#); Guest editor Special Issue, [Polymers MDPI "Biocompatibility, Biodegradability and Bioadhesiveness in Bio-Based Polymers"](#) The candidate has **organized 2 international workshops** (2023. Sep. 1st FEEDACTIV Workshop; 2023. Sep. 2nd FRIETS Workshop), **8 international conferences** (2019 - 2023. Sep. International Conference "Life Sciences for Sustainable Development", USAMV Cluj-Napoca, Romania; 2016-2018 Sep. International Symposium "Prospects of the 3rd Millennium Agriculture", USAMV Cluj-Napoca, Romania), **1 Scientific Round-Table** (2019 Jan. Food: The human diet, round table and Scientific Cafe. USAMV Cluj-Napoca, Romania) and will organize this year (19-21 June) the 14th CASEE Conference, "The Role of the Life Sciences Universities in the Green Transition of Central and Eastern Europe, <https://casee.usamvcluj.ro/>.

The **team leader is member of CNATDCU (IRVA)**, is Expert Evaluator at a) The Romanian Agency for Quality Assurance in Higher Education, Romania, b) Expert Evaluator, European Commission, Brussels, Belgium; c) Expert Evaluator, Executive Unit for Financing Higher Education, Research, Development and Innovation (UEFISCDI), Romania; d) Expert Evaluator, Ministry of Research and Innovation (MCI), Romania.

The leader (and the research team) is **member of prestigious international organizations**, such as: Slow Food International, ASIAR, ISEKI-Food Association, European Plant Science Organisation, American Nutrition Association.

The candidate has the status of **invited Professor** at prestigious universities abroad, as follows: 2023 Teramo University, Italy; 2021 Miguel Hernandez University, Spain; 2019 May Zhejiang University, China; 2019 June Suranaree University of Technology, Thailand; 2018 Oct. Yanka Kupala State University of Grodno, Belarus; Moreover, the candidate was **invited speaker** at prestigious events, such as: [Scena deschisă cu Dan Vodnar, 2023](#); [Alimentele viitorului, TEDxBraşov 2022](#); [Pagina de Psihologie, 2022](#); [TVR Cluj, Echibiotic](#); [EduBotaniq.ro](#) ; [CARIERE, Jurnal de leadership](#); [Serile JCI- Cluj Napoca-21.11.2019](#); [Leaders Educaton – UBB Cluj-Napoca – 17.10.2019](#); [Panel Member- Heinnovate- Supporting Innovation and Entrepreneurship in and through Higher Education, Bucharest 20-21 June 2019](#); [European Parliament-Romanian Food Industry, Product Quality and Current Research in Food Science, Brussels 26.11.2018](#)

The leader's educational project "[Stiinta cu sare si piper](#)" has over 78,000 followers on social networks and is present every Thursday on the show "La Măruța" on PROTV.

Since 2016, Dan Vodnar has the privilege of **leading an incredibly passionate research group** within the university, which has been **honoured as one of the top 8 research groups in Romania** at the prestigious [Romanian Research Gala 2023](#). In the last 5 years, under his supervision, he has successfully guided and supported the defence of [6 Ph.D. students](#).

The **performance indicators of the team members**, such as the H-index is impressive considering the short period of time since obtaining the doctorate degree (Lavinia Calinoiu H-index 19, obtained the doctorate degree in 2020 ; Laura Mitrea H-index-18, obtained the title of doctor in 2020; Adrian-Gheorghe Martau H-index 15, obtained the title of doctor in 2022; Bianca-Eugenia Stefanescu H-index 11, obtained the title of doctor in year 2021), respectively taking into account the fact that they are doctoral students (e.g. Nemes Silvia Amalia - 3rd year PhD student H-index 10; Anita Varvara 2nd year PhD student H-index 6; Diana Plămadă – 3rd year PhD student – H-index 6; Mihaela Ștefana Pașcuță - 3rd year PhD student - H-index 5). Also, the researchers in the team are at the same level of performance: Bernadette-Emoke Teleky H-index 17; Szabo Katalin H-index 17.

Another remarkable result of the research team members is the „[Tineri cercetatori in Stiinta si Inginerie - Rada Mihalcea, Award](#)– 1st place (31 July 2023, Cluj-Napoca, Romania), obtained by Lavinia Florina Calinoiu (married Muresan) and “**Mentiune speciala**” (July 2022, Cluj-Napoca, Romania) obtained by Laura Mitrea (married Cot).

The [medals and awards](#) obtained at national and international invention exhibitions by the team members, such as PRO INVENT (2 gold medals and diploma of excellence in 2023, 1 gold medal and diploma of excellence in 2022, 2 gold medals in 2020; etc.) INOVALIMENT (GRAND PRIZE in 2021, 2nd and 3rd places), TRAIAN VUIA (gold medal in 2022), underlines the colossal impact of the team research results.

In the last 5 years, each team members (except the PhD students) submitted research projects in the UEFISCDI national competitions, and the success rate was high, respectively: **4 PD projects funded** (Laura Mitrea, Szabo Katalin, Ștefănescu Bianca-Eugenia and Teleky Bernadette) and **1 TE project funded** (Lavinia Călinoiu), as described in point 9 of the present application.

Moreover, the international visibility of the team members is translated also by the fact that starting with **2021**, dr. Lavinia Calinoiu (team member) is Evaluator for Malta Council for Science and Technology (MCST) while dr. Szabo Katalin (team member) is evaluator for The National Office of Research, Development, and Innovation in Hungary, respectively for the National Science Center in Poland.

7. Curriculum Vitae narativ al candidatului “individual” sau al fiecărui membru al echipei de cercetare, în cazul candidatului “echipă de cercetare”, din care să reiasă rezultatele activității de cercetare din ultimii 5 ani, conform indicatorilor cantitativi din Anexa nr. 2 la regulament și criteriilor de evaluare calitativă prevăzute în Anexa nr. 3 la regulament.

Dan Cristian Vodnar - Team Leader

Prof. Dr. Dan C. Vodnar (DCV), in the last 5 years, I have continued to contribute significantly to the field of biotechnology and bioeconomy, as follows: **(1) Leadership of the Research Group.** Since 2016, I have had the privilege of leading an extremely passionate research group in our university. In 2023, our group was honoured as **one of the best 8 research groups in Romania in the 2023 Research Gala.** **(2) Successful Coordination of PhD Students.** Under DCV guidance, **6 doctorates** were completed, contributing to the formation of the next wave of bioeconomy researchers. **(3) International and national research projects.** DCV coordinates/coordinated **6 international research projects (min. 100.000 euro each) and 6 national research projects (min. 100.000 euro each)**, focusing on studying the metabolic capacity of probiotic strains and developing solutions to identify substitutes for essential sources of micro/macronutrients. **The total funding attracted via international research projects is 2.189.069 euro and the total funding attracted via national research projects is 4.421.013 euro. The projects list is detailed** in point 9 of the present application. **(4) Publications: ISI- 256.** Innovations in Sustainable Products. In 2022, the team launched Echibiotic, a symbiotic product based on our research, demonstrating our ability to bring breakthrough innovations to market. Projects with Prestigious European Funding: From 2023, Coordinator of the HORIZON 2020 project - Marie Skłodowska-Curie Actions (MSCA) - FEEDACTIV, focusing on the development of fish food, enriched with marine microalgae, seaweed, and herbaceous plants terrestrial. **(5) International and Academic Recognitions.** Since 2019, DCV has been consistently recognized in the annual ranking of the **Top 2% of scientists in the field of food science** by ELSEVIER BV and Stanford University. In 2022, he was elected a member of the European Academy. **(6) Remarkable Scientometric Indicators:** H-index and citations (WOS) - 45 H-index, 5169 citations without self-citations; h-index and citations (Google Scholar) - 55 H-index, 9960 citations; Total publications - 256. His works as the main author or co-author of the team leader (together with the team) classified with the article document type, published in Web of Science JCR quartile Q1 indexed journals according to AIS (the last available classification in relation to the year of application is considered) **are 66. Cumulative influence score A**, calculated as the sum of the weighted influence scores related to the articles published in the last 5 years (where the weighted influence score related to an article is defined as the influence score - AIS related to the article related to the number of authors of the article)

is of 42,057. (7) The candidate appears in the top 1% by citations/Highly Cited Researcher with the following 7 articles:

- ❖ MITREA, L., NEMEȘ, S.A., SZABO, K., TELEKY, B.E., VODNAR, D.C*. Guts Imbalance Imbalances the Brain: A Review of Gut Microbiota Association With Neurological and Psychiatric Disorders. *Frontiers in Medicine*, 2022, 31;9:813204. (*corresponding author)
- ❖ PLAMADA, D., VODNAR, D. C.*Polyphenols-Gut Microbiota Interrelationship: A Transition to a New Generation of Prebiotics. *Nutrients*, 2022, 14(1), 137. (*corresponding author)
- ❖ SIMON, E.; CĂLINOIU, L.F.; MITREA, L.; VODNAR, D. C.* Probiotics, Prebiotics, and Synbiotics: Implications and Beneficial Effects against Irritable Bowel Syndrome. *Nutrients*, 2021, 13, 2112. (*corresponding author)
- ❖ MARTĂU, G. A., CĂLINOIU, L. F., VODNAR, D. C.* Bio-vanillin: Towards a sustainable industrial production. *Trends in Food Science & Technology*, 2021, 109, 579-592 (*corresponding author)
- ❖ MARTĂU, G. A., MIHAI, M., VODNAR, D. C*. The Use of Chitosan, Alginate, and Pectin in the Biomedical and Food Sector Biocompatibility, Bioadhesiveness, and Biodegradability. *Polymers*, 2019. 11(11), 1837. (*corresponding author)
- ❖ PRECUP, G., VODNAR, D.C*. Gut Prevotella as a possible biomarker of diet and its eubiotic versus dysbiotic roles-A comprehensive literature review. *British Journal of Nutrition*.2019, 122 (2) 131-140 (*corresponding author)
- ❖ CĂLINOIU, L., VODNAR, D.C.*Whole Grains and Phenolic Acids: A Review on Bioactivity, Functionality, Health Benefits and Bioavailability. *Nutrients*. 2018. 10(11):1615. (*corresponding author)

8) The candidate (team leader) is Editor-in-Chief for **Bulletin of University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca. Food Science and Technology**, which starting with 2023 received impact factor of 0.7. Dan Vodnar is Invited Editor to coordinate special issues/research topics belonging to prestigious ISI journals, namely: *Microorganisms* (Q2, I.F. 4.92), *Foods* (Q1, I.F. 5.2), *Catalyst* (Q1, I.F.4.2), *Frontiers in Nutrition* (Q1, I.F. 6.59), *Frontiers in Public Health* (Q1, I.F. 5.2), *Frontiers in Microbiology* (Q2, I.F. 5.2), *Journal of Food Quality* (Q3, I.F. 1.76), *Frontiers in Sustainable Food System* (Q1, I.F. 5.00), *Frontiers in Bioengineering and Biotechnology* (Q1, I.F. 5.7), *Food Chemistry* (I.F. 5), *Food Characterization*, *Frontiers in Food Science and Technology*. These are: **Topic Editor - Research Topic "Nutrition and Sustainable Development Goal 9: Industry, Innovation, and Infrastructure" Frontiers in Nutrition Journal**; **Topic Editor - Research Topic "Sustainability in the Food Chain" Frontiers in Sustainable Food Systems**"; **Topic Editor - Research Topic "Organic Waste and By-products:**

Derived Compounds as Functional Agents from Fermentation Processes"; Review Editor - Section: "Public Health Policy" - Frontiers in Public Health; Review Editor - Section: "Microorganisms in Vertebrate Digestive Systems" Frontiers in Microbiology; Review Editor - Section: "Bioprocess Engineering" Frontiers in Bioengineering and Biotechnology Guest Associate Editor - Section: Frontiers in nutrition - Food Chemistry; Guest Associate Editor - Section: Frontiers in food science and technology - Food Characterization Guest Associate Editor - Section: Frontiers in food science and technology - Nutrition and Food Science Technology; Guest Editor Special Issue in Catalyst Journal "Current State-of-the-Art of Biocatalysts in the Food Sector" https://www.mdpi.com/journal/catalysts/special_issues/biocatalysts_food; Guest editor Special Issue, Microorganisms MDPI "Food Fermentations"; Guest editor Special Issue, Journal of Food Quality "Microbial Production of Naturally Occurring Reduced-Calorie Sweeteners"; Guest editor Special Issue, Polymers MDPI "Biocompatibility, Biodegradability and Bioadhesiveness in Bio-Based Polymers". (9) Dan Vodnar has the status of invited visiting Professor at prestigious universities abroad, as follows: 2018 Oct. Yanka Kupala State University of Grodno, Belarus; 2019 May. Zhejiang University, China; 2019 June Suranaree University of Technology, Thailand. (10) The list of inventions (5) and patents applications of the team leader (3) are detailed in point 9 of the present applications.

Assistant Prof. dr. Lavinia Florina Călinoiu (married Mureșan) – I hold a Ph.D. in the field of Food Biotechnology (SUMMA CUM LAUDE) with the title „Solid-State Fermentation and Thermal Process Approaches for the Release of Phenolic Compounds from Cereal By-Products”, under the coordination of Prof. dr. Dan C. Vodnar. My achievements have been mostly derived from the field of **bioeconomy, sub-field food biotechnology** with the final aim of increasing awareness about *waste/by-products fermentations* and *the innovative approach of integrated technology in waste/by-products valorisation* (biotechnology via fermentation of microorganisms, food technology via thermal processing, alternative resources via waste/by-products valorisation) for *sustainable health, economy, environment, and food resources*.

My scientific work involved the study of *metabolic capacity of strains to produce natural and bio-accessible compounds*, a topic which has a great impact worldwide due to the importance of *finding natural substitutes for chemically-derived compounds and essential micro/macronutrients sources, increasing the green extraction yields of bioactive/nutrient compounds from waste matrices and reduction of industrial-derived wastes/by-products*. In particular, I have been mostly involved within the fields of *solid-state fermentation, characterization and quantification of wastes and biotechnologically derived compounds, thermal processing, immobilization/microencapsulation of strains, biofilms and waste/by-products valorisation*, using methods which are able to provide information about metabolites into different conditions.

Currently, I am the director of the project for stimulating young independent teams („Tinere echipe”), project no. TE7/2022, project title “In situ fortification of vitamin B12 in cereal by products”, acronym: B12. The project addresses an emergent societal need, precisely *the reduction in global dietary vitamin B12 intake due to the increasing trend of substituting animal-based ingredients for plant-based ingredients*, whereas *there are limited plant-based food products fortified with vitamin B12 as this research direction is in its early stage*. The **B12 project** outcomes will significantly influence the scientific and technological field by the new concept of *in situ* fortification of vitamin B12 in cereal by-products by using *P. freudenreichii*, food-grade microorganisms, for the biosynthesis of the active form of vitamin B12 via fermentation, excluding the purification step (so expensive, time-consuming, and environmental non-friendly) and later addition process in food products.

In the last 5 years, I am/was **team member in all the 6 international and 4 national research projects** detailed in point 9 of the present application. My scientific achievements contributed *to be selected via national competition* on a Post-doctoral position in ACAMED project whereas I was *the responsible* of the project entitled „Abordare tehnologică integrată pentru dezvoltarea unui produs funcțional inteligent – ASTRO” within which she is developing a bio-system for *in situ* bio-accessible fibre-phenolics complex in wheat and oat bran in order to deliver a functional intelligent food product.

As a young researcher, according to Web of Science Core Collection, I reached successful metrics, such as a) **cumulative impact score (AIS) of 7.77**, b) **Q1 quartile** according to **AIS 11 articles**, c) **36 publications in Q1 and Q2 (3 in top 1% highly cited papers, 1 hot paper** - detailed in point 8 of the present application) d) **citations=1250 (according to WoS) and 1867 (according to GScholar)**, e) **Hirsch index=18 (WoS) (h-index=22; i10-index=22 – according to GScholar)**, f) **8 international book chapters** (Elsevier - detailed in point 8 of the present application), g) **cumulated impact factor>100**.

In the last 5 years, I am/was the **guest editor** of several special issues in prestigious ISI Web of Science journals, namely: (i) Topic Editor - Research Topic "Nutrition and Sustainable Development Goal 9: Industry, Innovation, and Infrastructure" Frontiers in Nutrition Journal; (ii) Topic Editor - Research Topic "Sustainability in the Food Chain" Frontiers in Sustainable Food Systems; (iii) Review Editor - Section: "Bioprocess Engineering" Frontiers in Bioengineering and Biotechnology; (iv) Guest Associate Editor - Section: Frontiers in nutrition - Food Chemistry; (v) Guest Editor Special Issue in Catalyst Journal "Current State-of-the-Art of Biocatalysts in the Food Sector"; (vi) Guest editor Special Issue, *Microorganisms* MDPI “Food Fermentations”; (vii) Guest editor Special Issue, *Journal of Food Quality* "Microbial Production of Naturally Occurring Reduced-Calorie Sweeteners"; (viii) Guest Associate Editor - Section: Frontiers in food science and technology - Nutrition and Food Science Technology. **Starting with 2022**, I am an evaluator for Malta Council for Science and Techonology (MCST).

In 2023, I was awarded with „Tineri cercetatori in Stiinta si Inginerie - Rada Mihalcea,, Award – **1st place**, 31 July 2023, Cluj-Napoca, Romania (<https://primariaclujnapoca.ro/evenimente/tinerii-cercetatori-premiul-pentru-stiinta-si-inginerie/>).

In 2022, I received the **Romania Academy Award -" Traian Săvulescu" – Domains: Biology, Fitopathology, Biotechnology, Food Science. Section Agricultural and Forestry Sciences**, for the paper: „Removal of bacteria, viruses, and other microbial entities by means of nanoparticles. Authors: **Dan C. Vodnar**, Laura Cot (Mitrea), Lavinia Florina Mureșan (Călinoiu), Katalin Szabo și Bianca Eugenia Ștefănescu (Vodnar)”. Bucharest, 7 dec. 2022, Romanian Academy Aula.

In 2020, 2021 and 2022 I received **national recognition for Scientific Activities being awarded with Honory Diploma and Asist. Prof. of the Year**, by USAMV, Cluj-Napoca, while in 2019 I received the **Honorary Diploma and Title “PhD student of the year 2019”**, together with the **Medal “Honour et Gratitude”, 2019**, by USAMV, Cluj-Napoca.

Other important achievements are: (i) The 3rd place Award for “In situ fortification of vitamin B12 in cereal by-products - B12, authors: **Lavinia Florina Călinoiu** si **Dan Cristian Vodnar**. INOVALIMENT 2022, category Biotechnology; (ii) the **Gold Medal at International Exhibition of Inventions and Innovations,,TRAIAN VUIA” Timișoara , edition VIII, period 08-10 october 2022**. “Pretreatment techniques applied to cereals bran” **Authors: Silvia Amalia Nemes, Lavinia Florina Călinoiu, Anca Corina Farcaș, Francisc Vasile Dulf si Dan Cristian Vodnar;** (iii) **Mention award** for “Integrated technological approach for the development of a sustainable and intelligent product”- ASTRO, International Fair of Inventions, and Innovations in the food field "INOVALIMENT" 2021.

I am a reviewer for prestigious journals, such as: *Food Chemistry, Food ChemistryX, Trends in Food Science and Technology, Critical Reviews in Food Science and Nutrition, Coatings, Molecules, Antioxidants, Frontiers in Microbiology*, etc.

Dr. Laura MITREA (married COȚ) is an **Assistant Professor** with a Ph.D. in Food Biotechnology (*SUMMA CUM LAUDE*) titled "*Bioconversion of waste cooking oil into diols and organic acids*," completed on January 29, 2020. Her research activities primarily focus on biotechnological conversions of various agro-industrial by-products. She specializes in the valorisation/isolation of bioactive compounds from food by-products, investigating probiotic microorganisms, and formulating active biofilms from diverse agro-food matrices. From 2020 to 2022, Laura coordinated the postdoctoral project *SuccinYst (PN-III-P1-1.1-PD-2019-0679)*, aiming to valorise lipid residues from the food sector by converting them into succinic acid using oleophilic yeasts. During her doctoral studies, Laura was involved in the entrepreneurial project *POCU/380/6.13-125171 - ACAMED* (2021), laying the foundation for the study "*Microencapsulation of succinic acid in biopolymeric matrices using the atomization technique and testing its bioaccessibility through in vitro digestion*."

Laura's research output includes a) **cumulative impact score (AIS) of 5.03**, b) **Q1 quartile** according to **AIS 7 articles**, c) **32 ISI publications (Q1, Q2)** with a total of 734 citations (WoS) and 1140 (Google Academic), d) **H-index-18 (Wos)**, and a cumulative impact factor exceeding 100. Her achievements have been recognized with various awards and medals, such as the *Excellence Diploma and Gold Medal* for Biogenic Microencapsulated Propandiol and Citric Acid (ProInvent - International Salon of Inventions and Research, November 18-20, 2020), *2nd Prize* – Integrated Model for Obtaining an Innovative Product for Individuals with Metabolic Disorders – AmberCaps (at Inovaliment - First International Fair of Inventions and Innovations in the Food Industry, November 22-26, 2021, Bucharest), *Special Mention* in the competition for Young Researchers in Science and Engineering (8th edition) ‘Rada Mihalcea Awards’ (Cluj-Napoca City Hall, July 29, 2022), ‘*Traian Săvulescu*’ Award – Book Chapter (as part of a collective work) - *Section Agricultural and Forestry Sciences - Romanian Academy* (Bucharest, December 7, 2022).

Laura Mitrea has been and is part of numerous international research projects, such as: Marie Skłodowska-Curie Actions, Research and Innovation Staff Exchange (Call: HORIZON-MSCA-2021-SE-01, ACRONYM RIA4FOOD, 2022-2026); ERASMUS-EDU-2022-PI-FORWARD, Glocal Ecosystems and Expanded Knowledge for Green Skills and Capability in the Food Sector (ACRONYM: GEEK4FOOD, 2022-2025); Marie Skłodowska-Curie Actions, Research and Innovation Staff Exchange (Call: HORIZON-MSCA-2021-SE, ACRONYM FEEDACTIV, 2022-2026); *SCAR (RTD/2021/OP/0001)*, Strategic Analysis and Support for Enhanced Research Cooperation in Agriculture and Food, 2022-2023; *COST Action Yeast4Bio (CA 18229)*, Non-Conventional Yeasts For The Production Of Bioproducts, 2021-2023; *Marie Skłodowska-Curie Actions*, Research and Innovation Staff Exchange (Call: H2020-MSCA-RISE-2017, Acronym FRIETS, 2021-2024); *CASEE fund 2021-2*, Bio-system for cereal by-products-derived antioxidants production, 2021-2022; *Manunet III- Non-Act*, NOvel Natural Antimicrobial Coatings for Food Production Chain 2018-2020; *Manunet II-TOMATOCYCLE*, 34/14.06.2017, Sustainable Exploitation of Tomato Processing Industry By-Products, 2017-2020.

Dr. Gheorghe-Adrian MARTAU (G.A.), 30 years old, has been enrolled in an **advanced post-doctoral program** at the University Babeş-Bolyai, Doctoral School of Chemistry. G.A. is a **Assistant Professor** at the Faculty of Food Science and Technology of UASVM-CN since February 2023. G.A. received his Ph.D. (*SUMMA CUM LAUDE*) in Food Biotechnology titled "*Recovery of by-product and solid organic waste for the production of sweeteners and flavouring*" in 2021 at UASVM-CN. He acted as a Scientific Researcher at the Life Science Institute of UASVM-CN, from April 2018 until now. In October 2022 was selected via a national competition for a Post-doctoral position in STEAM + HEALTH project whereas he is responsible of the project entitled "*The development of a biotechnological experimental model for enzymes production (cellulases, glucoamylases) using solid-state fermentation - ready to use*" within which he is developing a bio-system for production, separation and immobilisation of enzymes obtained

from wheat bran using solid-state fermentation (SsF). In addition, G.A. scientific achievements led to his selection through a national competition for a doctoral position in the ACAMED project, while he was answerable for the project entitled "*Development of an experimental model for sugar reduction with the production of erythritol and mannitol using ready-to-use acid lactic bacteria – SUGAR-FREE*". In particular, his main expertise lies in fermentative and bioprocess development for the conversion of waste/by-product material to several product technologies, focusing on SsF and submerged fermentations. G.A.'s achievements have been mostly derived from the bioeconomy field, and research involves studying the production of metabolites through biotechnological routes and innovative approaches of integrated technology for sustainable health, economy, environment, and food resources. Additionally, he valorises agro-industrial by-products/ organic fractions of municipal solid waste to obtain valuable co-products such as biomass, biopolymers, aroma compounds, sweeteners or enzymes. He was a **member of 3 national research projects** (PN-III-P1-1.1-TE-2019-1748, PN-III-P1-1.2- PCCDI-2017-0056, PN-III-P1-1.2- PCCDI- 2017-0473), and **2 international research projects** (Marie Skłodowska-Curie Actions No. 101007783—FRIETS, CASEE fund 2021-2). G.A. **received in 2021 a scholarship** from the German Federal Government (DBU - Deutsche Bundesstiftung Umwelt) for 6 months of research at ATB Leibniz-Institut für Agrartechnik und Bioökonomie in Potsdam, Germany, for the valorisation of organic fraction of municipal waste for lactic acid production. G.A. possesses extensive expertise in a wide range of areas, including Food Science & Technology, Food Microbiology, Biotechnological Conversions, Polymer Science, Chemistry, Batch and Continuous Fermentations, Solid-state and Submerge Fermentation, Agro-industrial Waste Valorization, as well as Pre/Pro/Sym/Nutri/Psychobiotics.

As a young researcher, G.A. is the **guest editor of four special issues** in 4 prestigious ISI Web of Science Journals, namely 2x *Frontiers in Nutrition* (Q1, I.F.=5.0), *Polymers* (Q1, I.F.= 5.0), *Microorganisms* (Q2, I.F.=4.5). He is a reviewer for prestigious journals, such as *Bioresource Technology*, *Microbial Cell Factories*, *Ecotoxicology and Environmental Safety*, *Journal of Fungi*, *Fermentation-Basel*, *Foods*, *Plants-Basel*, *Applied Sciences-Basel*, *Coatings*, *Microorganisms*, *International Journal of Molecular Sciences*, etc. In 2020 and 2021, he received the **Honorary Diploma** and Title "*PhD student of the year*", by UASVM, Cluj-Napoca. GA's scientific excellence is reflected in his publications, with a **cumulative impact score (AIS) of 6.405, Q1 quartile according to AIS 8 articles**, according to WoS a cumulative impact factor of over 106 with 18 Q1 and Q2 articles, h-index 15, generating 705 citations without self-citations. According to Google Academic an h-index 16 and 1291 citations. He is the co-author of four book chapters, and he participated in 31 conferences.

Scientific Researcher Grade II, Katalin SZABO, holds a Ph.D. in the field of Horticulture obtained in 2015, specializing in population genetics and molecular markers. Her doctoral thesis titled "*Study of intra and interpopulation variability of the endemic subspecies *Astragalus excapus* ssp. *transsilvanicus*, by*

correlating molecular techniques with morphometric characters for the development of conservation strategies" focuses on a rare endemic plant species with various unexplored aspects. The biological activities of the roots of the endemic subspecies *Astragalus excapus ssp. transsilvanicus* were the subject of a post-doctoral project **BIO-ASTRA**, where Katalin served as the project leader. The project was successfully completed in 2022, with results disseminated at international conferences and publications in open-access scientific journals such as *Plants* (IF: 4.658) and *International Journal of Molecular Sciences* (IF: 6.208). The main results highlight the capacity of extracts from *Astragalus excapus ssp. transsilvanicus* roots to efficiently inhibit *Staphylococcus aureus* and *S. epidermidis* bacterial strains, as well as the remarkable efficacy of the treatment in inhibiting the proliferation of B16F10 melanoma cells.

Katalin also participated as a team member in two international **ERANET** projects and a **Marie Skłodowska-Curie Actions**, Research and Innovation Staff Exchange (Call: H2020-MSCA-RISE-2017, Acronym FRIETS, 2021-2024). The "NOvel Natural Antimicrobial CoaTings for food production chain" or **NON-ACT** project, under the coordination of the National Interuniversity Consortium of Materials Science and Technology from Italy, focuses on the development of a sprayable polyvinyl alcohol (PVAP) polymeric matrix composed of food additives and loaded with natural compounds of plant origin, with antimicrobial and nutraceutical properties. The project "SusTainable exploItation of toMATO proCessing induSTRY by-produCts" or **TOMATOCYCLE**, in consortium with two universities from Greece (National Technical University of Athens and Agricultural University of Athens) and two small and medium enterprises, emphasizes the bioactive compounds found in tomato processing wastes and their valorisation in the context of circular economy and bio-based economy. The project's implementation resulted in several scientific studies disseminated at international conferences from 2018 to 2020, and the main findings of the investigations were published in high-impact Q1/Q2 journals such as *Antioxidants* - MDPI (IF: 7.675), *LWT- Food Science and Technology* - Elsevier (IF: 6.056), *Foods* - MDPI (IF: 5.561), *Plant Foods for Human Nutrition* - Springer (IF: 4.124), *Polymers* - MDPI (IF: 4.967), among others, contributing to a better understanding in rethinking food sources, losses, and by-products.

Katalin was selected to participate in the "Academy of Research Entrepreneurs in Medicine – **ACAMed**" project, co-financed by the Human Capital Operational Program, aiming to improve entrepreneurial skills. The initiative focused on developing a product from tomato processing by-products, namely functional microcapsules, facilitating the incorporation of carotenoids into various food matrices due to their specific lipophilic nature. The resulting microcapsules underwent a simulated *in vitro* digestion technique to evaluate the bioaccessibility of carotenoids, and the findings were published as an original research article in the journal *LWT- Food Science and Technology* - Elsevier (IF: 6.056).

Due to significant interdisciplinary collaborations, Katalin is a co-author of 5 international book chapters with high relevance in the field. One of these chapters was honoured by the Romanian Academy with the

"Traian Săvulescu" distinction in the Agricultural and Forestry Sciences section (Bucharest, Dec. 7, 2022). Her excellent scientific skills are reflected to date in 36 ISI publications (Q1, Q2) according to Web of Science, generating a total of 819 citations (according to Web of Science), with a **cumulative impact score (AIS) of 7.28, Q1 quartile** according to **AIS 7 articles**, and a h-index of 17. According to Google Academic h-index 20 and 1443 citations since 2019.

Katalin Szabo serves as a reviewer for scientific journals such as *Plants*, *International Journal of Food Science and Technology*, *Antioxidants*, *Journal of Food Science*, and others. She has also been involved in the editorial boards of *Foods* and *Catalysts* as a guest editor for special issues. Katalin received certification in project management during her doctoral stage and was selected to participate as a project evaluator for research institutions in Hungary, Switzerland, and Poland.

Dr. Bernadette-Emőke Teleky (BET) obtained her **Ph.D.** in **2016** from the Technical University of Cluj-Napoca, specializing in energetic valorisation through hydrogen production from biomass anaerobic fermentation. Her expertise includes anaerobic fermentation, agro-industrial by-product recovery, mathematical modelling, optimization methods for fermentation, rheological, and statistical analysis. She accumulated research experience during her PhD, supported by a scholarship from the **German Federal Environmental Foundation** (DBU - <https://www.dbu.de/>), where she worked at Helmholtz Centre for Environmental Research in Leipzig, Germany. Returning to research in October 2018 at UASVM-CN, she was member of several national and international projects such like "*Sweetconomy*," (PN-III-P1-1.2-PCCDI-2017-0056), TE 55/2020, CASEE fund 2021-2, three **Marie Skłodowska-Curie** projects (***FRIETS***, ***FEEDACTIV***, ***RIA4FOOD***), as well as an Interreg Programme Danube Region project (***RISE-DRP0200476***). Currently, she is the project director for a postdoctoral research project titled "*Efficient biofilm production from itaconic acid, based on renewable and biodegradable sources, with improved functionality*" (PN-III-P1-1.1-PD-2021-0672). This project aims to produce itaconic acid from food waste through circular economy practices, minimizing waste production. Dr. Teleky is also pursuing a second Ph.D. titled "Impact of food products derived from waste on short-chain fatty acid (SCFA) production: association with functional foods in autoimmune diseases.", through which she also earned an Erasmus Mobility Grant to the University of Iceland (28.11-02.12.2022) and another to the University of Oslo, Norway (30.03 - 03.04.2023) under the project "Continuous Flow Interchange of Communication and Knowledge in Biomedical University Research."

Dr. Teleky's scientific excellence is reflected in her publications, with a **cumulative impact score (AIS) of 8.46, Q1 quartile** according to **AIS 9 articles**, according to **WoS** a cumulative impact factor of over **173** with 35 Q1 and Q2 articles, h-index 17, generating 638 citations without self-citations, according to Google Academic h-index 19 and 1211 citations. She is the lead author of an international book chapter, co-author of four, and has participated in 28 conferences.

BET is the guest editor of **four** special issues in prestigious **ISI** Web of Science journals, namely *Polymers* (Q1, I.F. 5), *Frontiers in Microbiology* (Q2, I.F. 5.2), *Catalysts* (Q2, I.F. 3.9) and *Frontiers in Food Science and Technology*, section Food Characterization, and she is a reviewer board member for two ISI Web of Science journals, namely *Microorganisms* (Q2, I.F. 4.5), *C-journal of Carbon Research* (Q3, I.F. 4.1). Additionally, she is a reviewer in several prestigious journals and conducted > 150 reviews.

Dr. Bianca Eugenia Ștefănescu obtained her Ph.D. (SUMMA CUM LAUDE) in the field of Pharmacy in 2021, with the thesis entitled "Bioactive potential and bioaccessibility of natural compounds from Ericaceae species". During her doctoral studies, Bianca accumulated significant expertise in the characterization of the chemical composition and biological activities (antioxidant, antimicrobial and antimutagenic) of the leaves of some *Vaccinium* species, in the microencapsulation of the extracts using the optimized spray drying method and in the evaluation of the bioaccessibility of phenolic compounds after *in vitro* digestion model. Throughout this period, she gained substantial experience also in food waste valorisation through biotechnological ways, and in the utilization of nanoparticles for the controlled release of bioactive compounds. Currently, Bianca is the **project director** of the postdoctoral research project obtained in 2022, project title: "Evaluation of polyphenols migration from bio-based active films into food", project no. PD 7/2022, PN-III-P1-1.1-PD-2021-0444. Bianca received a scholarship from UMF CJ and became a **postdoctoral researcher (2021-2022)** in the target group of the project POCU-125171: 'ACAMed-Academy of Research Entrepreneurs in Medicine'. The project aims to develop the managerial and entrepreneurial skills of the target group. Bianca has been and is part of **national and international research projects**, such as: Project "Developing and modeling of bioprocesses for obtaining 1,3-propanediol (PD) and citric acid from crude glycerol, with applications in the food industry" – Acronym ProGlyCom, 2016-2020. Funding: ANCSI, Marie Skłodowska-Curie Actions, Research and Innovation Staff Exchange (Call: HORIZON-MSCA-2021-SE-01, Acronym RIA4FOOD, 2022-2026); Marie Skłodowska-Curie Actions, Research and Innovation Staff Exchange (Call: HORIZON-MSCA-2021-SE, Acronym FEEDACTIV, 2022-2026); Marie Skłodowska-Curie Actions, Research and Innovation Staff Exchange (Call: H2020-MSCA-RISE-2017, Acronym FRIETS, 2021-2024); Manunet III-Non-Act, Novel Natural Antimicrobial Coatings for food production chain 2018-2020; Manunet II-TOMATOCYCLE, Sustainable exploitation of tomato processing industry by-products, 2017-2020. In 2022, Bianca was **awarded** by the Romanian Academy with the "**Traian Săvulescu**" Award - Fields of Biology, Phytopathology, Biotechnology, Food Science. Section of Agricultural and Forestry Sciences, for the book chapter: Removal of bacteria, viruses, and other microbial entities by means of nanoparticles. Authors: Dan C. Vodnar, Laura Mitrea, Lavinia Florina Călinoiu, Katalin Szabo and Bianca Eugenia Ștefănescu. Bucharest, Dec. 7, 2022, Romanian Academy Hall. Bianca's research activity has resulted in the publication of **18 articles and book chapters**, generating a total number of citations of 462 (Wos) and 677 (G-

Academic), having a cumulative impact factor > 60. In the last 5 years, the research activity resulted in the publication of **9 articles in ISI indexed journals (Wos)**, of which **2 Q1 articles (AIS)** and 3 book chapters in international books, with a **cumulative influence score (AIS) of 2.12** and of **2 Patent of invention: RO 135223 / 2021**. "Compoziția și procedeul de obținere a acidului citric biogenic microîncapsulat". Authors: Vodnar Dan Cristian, Mitrea Laura, Dulf Francisc Vasile, Trif Monica, Socaci Sonia, Pop Oana Lelia, Simon Elemer, **Vodnar (Ștefănescu) Bianca Eugenia** and **RO 135220 / 2021**. "Compoziția și procedeul de obținere a 1,3-Propandiolului biogenic microîncapsulat". Authors: Vodnar Dan Cristian, Mitrea Laura, Dulf Francisc Vasile, Trif Monica, Socaci Sonia, Pop Oana Lelia, Simon Elemer, **Vodnar (Ștefănescu) Bianca Eugenia**. In 2022, Bianca was **Guest Editor** to the Special Issue "Current State-of-the-Art of Biocatalysts in the Food Sector", Catalyst.

Ph.D. student Silvia Amalia NEMES (married Antal Berbecaru) is currently in her third year of doctoral studies at the University of Agricultural Sciences and Veterinary Medicine in Cluj-Napoca, specializing in Biotechnology. She holds an engineering degree from the Faculty of Food Science and Technology and a master's degree in Gastronomy, Nutrition, and Food Dietetics from the same faculty. Since February 2019, Amalia has served as a research assistant at the Life Sciences Institute of USAMV-CN. Over the past five years, she has expanded her expertise in various areas, including the characterization of bioactive compounds, assessment of biological activities, application of both conventional and non-conventional pre-treatments on wheat and oat bran, biotechnological conversions, valorisation of agro-industrial by-products, and development of functional foods. Amalia actively contributes to several national and international research projects. Notably, she is involved in **national projects PN-III-P4-ID-PCE-2020-2306** and **PN-III-P4-PCE-2021-0750**, focusing on biotechnological approaches to enhance the bioaccessibility and bioavailability of bioactive compounds from specific substrates, such as cereal waste. Additionally, she actively participated in the national project POC, P-37_637/2016, known as ProGlyCom. On the **international** part, Amalia is actively engaged in the H2020-MSCA-RISE-2020 project, "FRIETS," running from 2021 to 2024. Other international projects include "FEEDACTIV" and the Marie Skłodowska-Curie Research and Innovation Staff Exchange project "RIA4FOOD." Amalia's **academic contributions** are reflected in her publications—**14 ISI-indexed papers** and **4 chapters** in international books published by Elsevier. Her work has garnered significant attention, with 407 citations on Google Scholar, an h-index of 11, and a cumulative impact factor exceeding 60. According to AIS indexing, Amalia has **5 AIS indexed article (Q1)** accumulating an **influence score of 2.85**. Also, Amalia is the co-author of **1 article ranked in the top 1%** by citations/Highly Cited Researchers in the field (MITREA, L., NEMEȘ, S.A., SZABO, K., TELEKY, B.E., VODNAR, D.C*. Guts Imbalance Imbalances the Brain: A Review of Gut Microbiota Association with Neurological and Psychiatric Disorders. *Frontiers in Medicine*, 2022, 31;9:813204. (*corresponding author). Recognizing her research achievements, Amalia received the **Diploma of**

Excellence at the "PRO INVENT" International Salon of Scientific Research, Innovation, and Invention in October 2021, the **Gold Medal** at the "TRAIAN VUIA" International Exhibition of Inventions and Innovations in October 2022, and the **Gold Medal** at "The 4th International Exhibition INVENTCOR" in September 2023. In acknowledgment of her outstanding contributions, Amalia received the **Diploma of Honour** and the title of **Ph.D. student of the Year** at USAMV-CN in 2023.

Ph.D. student Rodica-Anita Varvara (married Chiciudean) is presently in her second year of doctoral studies in the field of Biotechnology. She earned her engineering degree in 2020 from the Faculty of Food Science and Technology (UASVM Cluj-Napoca) and completed her master's studies in Gastronomy, Nutrition and Food Dietetics from the same faculty in 2022. In her third year of bachelor's studies (2019), she joined the current research group. Rodica-Anita has explored various research topics, including the development of biodegradable biofilms with bioactive properties, the characterization and reintegration of bioactive compounds from food processing by-products in functional foods, and the 3D printing of foods for different categories of individuals. Among her research topics are the in-depth study of the endemic species *Astragalus exscapus* spp. *transsilvanicus*, the cultivation of probiotic microorganisms, and the role of probiotics in mineral absorption at the intestinal level. Since then, her research contributions have resulted in the publication of **8 articles in ISI-indexed journals**, as either first author or co-author, and the contribution to **2 chapters** in international books published by Elsevier (co-author). These have generated a total of 210 citations according to Google Scholar, with an h-index of 7 (according to Google Scholar) and an h-index of 6 (according to WoS), with a cumulative impact factor exceeding 40. Rodica-Anita has **2 AIS indexed articles (Q1)** as co-author, accumulating an **influence score of 1.41**. In 2020, Rodica-Anita received a **Diploma of Excellence** at the Pro Invent Exhibition, 18th edition, held in Cluj-Napoca, and was awarded a **Mention** at the 9th edition of the International Conference for Students "Student in Bucovina". She has also participated in other conferences, workshops, and relevant academic events in her research field, actively contributing to the exchange of knowledge. In 2021, she was also a part of the ROSE project, FANFOOD Summer School which had the goal of increasing access to higher education for high school students in rural areas of Romania. In 2022, she actively participated in the **international Erasmus+ Project 2020-1-RO01-KA203-080172 – Blended Mobility Programme**, which focused on the valorisation and reintegration of by-products resulting from the food industry. Currently, Rodica-Anita benefits from an **international scholarship** offered by the Deutsche Bundesstiftung Umwelt, through which she conducts research for her doctoral thesis at the Max Planck Institute for Biology in Tübingen, Germany. Her research there is focused on two probiotic strains and their ability to be enhanced with minerals found in apple pomace and cabbage wastes to facilitate better delivery and absorption of minerals in the gut. She is also a member of an **international research project**. Under the Marie Skłodowska-Curie Research and Innovation Staff Exchange project "RIA4FOOD," the objective is to employ a range of interdisciplinary technological

methods. The goal is to develop functional foods that boast scientifically validated nutritional profiles, offer personalized health advantages, and have extended shelf life, ensuring accessibility on a global scale.

Ph.D. student Călina Ciont - a third-year student in the field of biotechnologies, started her research activity in 2021 at the Life Institute-USAMV Cluj. In the last three years, she contributed to the research side, publishing 8 articles in ISI-indexed journals in Q1, being the first author or co-author, and 2 book chapters in international publishing houses (co-author). These contributions generated 69 citations (according to Google Scholar) and an h-index of 5 (according to Google Scholar and WoS). Călina Ciont addressed various research topics, including synthesizing iron oxide nanoparticles, the toxicity of nanoparticles, reintegrating bioactive compounds from food by-products, and *in vivo* testing of iron oxide nanoparticles in treating anemia. In 2022, she won the **3rd prize at the Pro Invent Salon**, 9th edition, held in Cluj-Napoca, the **1st prize** at the "AUREL VLAICU" conference organized by the University of Arad, and received a mention at the 10th edition of the Conference International for Students "Student in Bucovina". She actively participated in the exchange of information at numerous conferences, workshops, and academic events related to his field. She is a member of the following research projects: Marie Skłodowska-Curie Research and Innovation Staff Exchange entitled "RIA4FOOD - Multi-Actor Research and Innovation Approaches for Functional Food", PN-III-P4-ID PCE-2020-2126, within PNCDI I, 24550/27.09.2023.

Ph.D. student Diana Plămadă is currently in her fourth year of doctoral studies at the University of Agricultural Sciences and Veterinary Medicine in Cluj-Napoca, specializing in Biotechnology. She holds a diploma in nutritionist dietetics from Iuliu Hațieganu University of Medicine and Pharmacy, Faculty of Pharmacy, with a specialization in Nutrition and Dietetics. Additionally, she has a master's degree in nutrition and quality of life from the same university. In the second year of her doctoral studies, Diana was awarded a scholarship by the German government, spanning 9 months, during which she conducted a portion of her doctoral research at the Technical University of Berlin. Her primary research focus revolves around the repurposing and valorisation of food waste, particularly emphasizing bioactive compounds derived from fruit by-products, specifically those obtained from apple processing industries. Her investigations encompass extraction methods of these bioactive compounds, followed by testing their biological activities on selected matrices, ultimately aiming to analyse observed effects at the *in vitro* or *in vivo* level. Presently, Diana serves as a **research assistant** on the international project "GEEK4Food," which seeks to advance the food sector through diverse strategies for long-term improvement and development. Actively contributing to various national and international research initiatives, Diana is involved in projects like the **national** PN-III-P4-PCE-2021-0750 and **international projects** such as H2020-MSCA-RISE-2020, also known as "FRIETS" (2021-2024), the "FEEDACTIV" project (Grant Agreement no 101086261), and the ERASMUS-EDU-2022-PI-FORWARD project, titled "Glocal Ecosystems and Expanded Knowledge for

green skills and capability in the Food Sector" (ACRONYM: GEEK4FOOD, 2022-2025). Diana's academic contributions are evidenced by her publication record, comprising **9 ISI-indexed papers** according to Wos (Q1 and Q2) and **2 international book chapters** published by the esteemed Elsevier publishing house. Her work has garnered recognition, with **233 citations** on Google Scholar, an **h-index of 6**, and a **cumulative impact factor exceeding 40**. According to **AIS indexing**, Diana has **2 AIS indexed article** (Q1) accumulating an **influence score of 1.4**. Also, Diana is the **first author of 1 article ranked in the top 1%** by citations/Highly Cited Researchers in the field (**PLAMADA, D., VODNAR, D. C.*Polyphenols-Gut Microbiota Interrelationship: A Transition to a New Generation of Prebiotics**. *Nutrients*, 2022, 14(1), 137. (*corresponding author).

Ph.D. student Ana-Maria Cocean (married Dudău-Rai) - PhD student in her second year at the University of Agricultural Sciences and Veterinary Medicine in Cluj-Napoca, in the field of Biotechnology. She obtained an engineering degree at the Faculty of Food Science and Technology, and later obtained a master's degree in food safety and consumer protection, both at the same faculty. He started his research activity in 2022 at the Institute of Life-USAMV Cluj-Napoca. Ana-Maria Cocean (married Dudău-Rai) has been actively involved in the academic community, participating in various conferences, workshops, and events relevant to her field of research, thus contributing to the exchange of knowledge. In her Ph.D., she focuses on the topic "Modulation of gut microbiota by controlled administration of probiotics". She is also a member of **international research projects**, such as the Marie Skłodowska-Curie Research and Innovation Staff Exchange, entitled "RIA4FOOD - Multi-Actor Research and Innovation Approaches for Functional Food".

Ph.D. student Mihaela Ștefana Pășcuță (married Canalis) - Ph.D. student in her third year at the University of Agricultural Sciences and Veterinary Medicine in Cluj-Napoca, in the field of Biotechnology. She holds a master's degree in Processing Systems and Quality Control of Agri-Food Products obtained at the same university, along with a diploma of excellence as engineer in the food industry, obtained at the Technical University of Cluj-Napoca, North University Centre of Baia-Mare. In the second year of her doctorate, Mihaela was awarded an **international scholarship** offered by the German government, the Deutsche Bundesstiftung Umwelt, through which she carried out research for her doctoral thesis at the Karlsruhe Institute of Technology (Germany) and the Max-Rubner Institute (Karlsruhe, Germany), for a period of 9 months. The focus of her research is the development of hybrid food packaging using edible ingredients. The process of obtaining them is based on the irreproachable advantages of nanotechnology, through the nanoencapsulation of rosemary oil in solid lipid nanoparticles. The purpose of using this innovative technology is to capitalize pectin into fortified and bioactive edible films and to increase the effectiveness of rosemary oil's bioactive compounds. Mihaela is an active member in the research teams of several **international projects**, such as the Marie Skłodowska-Curie Research and Innovation Staff

Exchange, such as the H2020-MSCA-RISE-2020 project Type of Action: MSCA-RISE Acronym: FRIETS (2021-2024), focused on the recovery of bioactive compounds from industrial and agro-food by-products and the analysis of their biological activities in order to optimize the food chain of fresh and dried fruits with added value; the "FEEDACTIV" project (Grant Agreement no 101086261) focused on the development of functional food for fish based on bioactive compounds of marine and plant origin; and the project titled "RIA4FOOD - Multi-Actor Research and Innovation Approaches for Functional Food" which aims to use multi-disciplinary technological approaches to design functional foods with scientifically proven nutritional content, personalized health benefits and extended shelf life to facilitate access them worldwide. She actively participated in the exchange of information at numerous conferences, workshops, and academic events related to her field. Recognizing her research achievements, Mihaela received the **2nd prize** at the 10th edition of the International Conference for Students "Student in Bucovina" (2022) and the **INOVALIMENT prize** at the International Fair of Food Inventions and Innovations (2021). Mihaela's academic contributions are evidenced by her publication record, comprising **5 ISI-indexed papers** according to WOS (Q1 and Q2) and **2 international book chapters** published by the esteemed Elsevier publishing house (as first and co-author). Her work has garnered recognition, with **115 citations** on Google Scholar, an **h-index of 5**, and a **cumulative impact factor of 28**. According to **AIS indexing**, Mihaela has **2 AIS indexed article (Q1)** accumulating an **influence score of 1.05**.

8. Lista publicațiilor candidatului "individual" sau a fiecărui membru al echipei de cercetare, în cazul candidatului "echipă de cercetare", cu evidențierea publicațiilor relevante ale candidatului în ultimii 5 ani și a publicațiilor comune ale membrilor unei echipe de cercetare în cazul candidatului "echipă de cercetare". Se menționează și un link al paginii web unde se regăsesc publicațiile candidatului.

The list of publications of the research team members (only the relevant publications - Q1 and Q2) in the last 5 years and the joint publications (*in Italics*) of the research team members can be found below.

Moreover, the **publications link is: <http://danvodnar.ro/publications-and-conferences/>**

2024 - 1 PUBLICATION

*I. Ștefănescu, B. E., Socaci, S. A., Fărcaș, A. C., Nemeș, S. A., Teleky, B. E., Martău, G. A., Calinoiu, L. F., Mitrea, L., Ranga, F., Grigoroaea, D., Vodnar, D. C. & Socaciu, C. (2024). Characterization of the Chemical Composition and Biological Activities of Bog Bilberry (*Vaccinium uliginosum* L.) Leaf Extracts Obtained via Various Extraction Techniques. *Foods*, 13(2), 258. (Q1)*

2023 - 12 JOINT PUBLICATIONS (18 PUBLICATIONS IN TOTAL)

1. [Varvara, R. A., & Vodnar, D. C. \(2023\). Probiotic-driven advancement: Exploring the intricacies of mineral absorption in the human body. *Food Chemistry: X*, 101067. \(Q1 - AIS\)](#)
2. [Ciont, C., Difonzo, G., Pasqualone, A., Chis, M. S., Ranga, F., Szabo, K., Simon, E... & Vodnar, D. C. \(2023\). Phenolic profile of micro-and nano-encapsulated olive leaf extract in biscuits during in vitro gastrointestinal digestion. *Food Chemistry*, 428. \(Q1 - AIS\)](#)
3. [Ciont, C., Mesaros, A., Pop, O. L., & Vodnar, D. C. \(2023\). Iron oxide nanoparticles carried by probiotics for iron absorption: a systematic review. *Journal of Nanobiotechnology*, 21\(1\), 1-19. \(Q1 - AIS\)](#)
4. [Mitrea, L., Medeleanu, M., Pop, C. R., Rotar, A. M., & Vodnar, D. C. \(2023\). Biotics \(Pre-, Pro-, Post-\) and Uremic Toxicity: Implications, Mechanisms, and Possible Therapies. *Toxins*, 15\(9\), 548. \(Q1 - AIS\)](#)
5. [Haş, I. M., Teleky, B. E., Vodnar, D. C., Ştefănescu, B. E., Tit, D. M., & Nişescu, M. \(2023\). Polyphenols and Cardiometabolic Health: Knowledge and Concern among Romanian People. *Nutrients*, 15\(10\), 2281. \(Q1\)](#)
6. [Haş, I. M., Vodnar, D. C., Bungau, A. F., Tarce, A. G., Tit, D. M., & Teleky, B. E. \(2023\). Enhanced elderberry snack bars: A sensory, nutritional, and rheological evaluation. *Foods*, 12\(19\), 3544. \(Q1\)](#)
7. [Haş, I. M., Tit, D. M., Bungau, S. G., Pavel, F. M., Teleky, B. E., Vodnar, D. C., & Vesa, C. M. \(2023\). Cardiometabolic Risk: Characteristics of the Intestinal Microbiome and the Role of Polyphenols. *International Journal of Molecular Sciences*, 24\(18\), 13757. \(Q1\)](#)
8. [Plamada, D., Teleky, B. E., Nemes, S. A., Mitrea, L., Szabo, K., Călinoiu, L. F., ... Vodnar, D & Nişescu, M. \(2023\). Plant-Based Dairy Alternatives—A Future Direction to the Milky Way. *Foods*, 12\(9\), 1883. \(Q1\)](#)
9. [Haş, I. M., Teleky, B. E., Szabo, K., Simon, E., Ranga, F., Diaconeasa, Z. M., ... Vodnar, D & Nişescu, M. \(2023\). Bioactive Potential of Elderberry \(*Sambucus nigra* L.\): Antioxidant, Antimicrobial Activity, Bioaccessibility and Prebiotic Potential. *Molecules*, 28\(7\), 3099. \(Q2\)](#)
10. [Martău, G. A., Bernadette-Emőke, T., Odocheanu, R., Soporan, D. A., Bochiş, M., Simon, E., & Vodnar, D. C. \(2023\). Vaccinium Species \(*Ericaceae*\): Phytochemistry and Biological Properties of Medicinal Plants. *Molecules*, 28\(4\), 1533. \(Q2\)](#)
11. [Csatlos, N. I., Simon, E., Teleky, B. E., Szabo, K., Diaconeasa, Z. M., Vodnar, D. C., Ciont, C... & Pop, O. L. \(2023\). Development of a Fermented Beverage with *Chlorella Vulgaris* Powder on Soybean-Based Fermented Beverage. *Biomolecules*, 13\(2\), 245. \(Q1\)](#)
12. [Vodnar, D. C., & Teleky, B. E. \(2023\). Recent Trends in Antibacterial Coatings and Biofilm. *Coatings*, 13\(2\), 255. \(Q2\)](#)

13. [Dulf, F. V., Vodnar, D. C., & Dulf, E. H. \(2023\). Solid-state fermentation with *Zygomycetes* fungi as a tool for biofortification of apple pomace with \$\gamma\$ -linolenic acid, carotenoid pigments and phenolic antioxidants. *Food Research International*, 173, 113448. \(Q1 - AIS\)](#)

14. [Pop, O. L., Suharoschi, R., Socaci, S. A., Berger Ceresino, E., Weber, A., Gruber-Traub, C., Vodnar, D.C., ... & Johansson, E. \(2023\). Polyphenols—Ensured Accessibility from Food to the Human Metabolism by Chemical and Biotechnological Treatments. *Antioxi*. \(Q1 - AIS\)](#)

15. Semeniuc, C. A., Ranga, F., Podar, A. S., Ionescu, S. R., Socaciu, M. I., Fogarasi, M., Vodnar, D.C., ... & Socaci, S. A. (2023). Determination of Coenzyme Q10 Content in Food By-Products and Waste by High-Performance Liquid Chromatography Coupled with Diode Array Detection. *Foods*, 12(12), 2296. (Q1)

16. Dumitru, M., Lefter, N. A., Habeanu, M., Ciurescu, G., Vodnar, D. C., Elemer, S., ... & Dudu, A. (2023). Evaluation of Lactic Acid Bacteria Isolated from Piglets Tract and Encapsulation of Selected Probiotic Cells. *Agriculture*, 13(5), 1098.

17. Aurori, M., Niculae, M., Hanganu, D., Pall, E., Cenariu, M., Vodnar, D. C., ... & Andrei, S. (2023). Phytochemical Profile, Antioxidant, Antimicrobial and Cytoprotective Effects of Cornelian Cherry (*Cornus mas* L.) Fruit Extracts. *Pharmaceuticals*, 16(3), 420. (Q2)

18. Podar, A. S., Semeniuc, C. A., Ionescu, S. R., Socaciu, M. I., Fogarasi, M., Fărcaș, A. C., Vodnar, D.C., ... & Socaci, S. A. (2023). An overview of analytical methods for quantitative determination of coenzyme Q10 in foods. *Metabolites*, 13(2), 272. (Q2)

3 BOOK CHAPTERS (International)

Teleky, B. E., Mitrea, L., Călinoiu, L. F., Martău, A. G., & Vodnar, D. C. (2023). Microbial Processes to Produce Food Ingredients and Products. Elsevier

*Mitrea, L., Calinoiu, L. F., Teleky, B. E., Szabo, K., Martău, A. G., Nemes, S. A., ... & Vodnar, D. C. (2023). Fruit and vegetable wastes for biobased chemicals. In *Fruit and Vegetable Waste Utilization and Sustainability* (pp. 43-76). Academic Press. Elsevier*

*Calinoiu, L. F., Mitrea, L., Teleky, B. E., Szabo, K., Martău, A. G., Nemes, S. A., ... & Vodnar, D. C. (2023). Fruit and vegetable waste and by-products for pigments and color. In *Fruit and Vegetable Waste Utilization and Sustainability* (pp. 77-100). Academic Press. Elsevier*

2022 - 20 JOINT PUBLICATIONS - 2 HIGHLY CITED PAPERS (37 PUBLICATION IN TOTAL)

I.ȘTEFĂNESCU, B.E.; SOCACIU, C.; VODNAR, D.C. Recent Progress in Functional Edible Food Packaging Based on Gelatin and Chitosan. *Coatings* 2022, 12, 1815. (*corresponding author) (Q2)*

2. SZABO, K.; MITREA, L.; CĂLINOIU, L.F.; TELEKY, B.-E.; MARTĂU, G.A.; PLAMADA, D.; PASCUTA, M.S.; NEMEȘ, S.-A.; VARVARA, R.-A.; VODNAR, D.C*. *Natural Polyphenol Recovery from Apple-, Cereal-, and Tomato-Processing By-Products and Related Health-Promoting Properties. Molecules* 2022, 27, 7977. (*corresponding author) (Q2)
3. MITREA, L., CĂLINOIU, L. F., TELEKY, B. E., SZABO, K., MARTĂU, A. G., ȘTEFĂNESCU, B. E., DULF, F.V., VODNAR, D. C*. (2022). *Waste cooking oil and crude glycerol as efficient renewable biomass for the production of platform organic chemicals through oleophilic yeast strain of Yarrowia lipolytica. Environmental Technology & Innovation*, 28, 102943. (*corresponding author) (Q1)
4. [VODNAR, D. C., CALINOIU, L. F., MITREA, L. Exploiting the effect of dietary fibre on the gut microbiota in patients with pelvic radiotherapy. British Journal of Cancer, 2022, 127\(9\), 1575-1576.](#) (Q1 - AIS)
5. [NEMES, S.A.; CĂLINOIU, L.F.; DULF, F.V.; FĂRCAS, A.C.; VODNAR, D.C* Integrated Technology for Cereal Bran Valorization: Perspectives for a Sustainable Industrial Approach. Antioxidants 2022, 11, 2159](#) (*corresponding author) (Q1 - AIS)
6. TELEKY, B. E., MARTĂU, G. A., RANGA, F., POP, I. D., VODNAR, D. C*. *Biofunctional soy-based sourdough for improved rheological properties during storage. Scientific Reports*, 2022, 12(1), 17535. (*corresponding author) (Q2)
7. [TELEKY, B.-E.; MITREA, L.; PLAMADA, D.; NEMES, S.A.; CĂLINOIU, L.-F.; PASCUTA, M.S.; VARVARA, R.-A.; SZABO, K.; VAJDA, P.; SZEKELY, C.; MARTĂU, G.-A.; ELEMER, S. RANGA, F.; VODNAR, D.C*. Development of Pectin and Poly \(vinyl alcohol\)-Based Active Packaging Enriched with Itaconic Acid and Apple Pomace-Derived Antioxidants. Antioxidants 2022, 11, 1729.](#) (*corresponding author) (Q1 - AIS)
8. [PASCUTA, M.S.; VARVARA, R.-A.; TELEKY, B.-E.; SZABO, K.; PLAMADA, D.; NEMEȘ, S.-A.; MITREA, L.; MARTĂU, G.A.; CIONT, C.; CĂLINOIU, L.F.; BARTA, G.; VODNAR, D.C*. Polysaccharide-Based Edible Gels as Functional Ingredients: Characterization, Applicability.](#) (*corresponding author) (Q1 - AIS)
9. SZABO, K.; TELEKY, B.-E.; RANGA, F.; ROMAN, I.; KHAOULA, H.; BOUDAYA, E.; LTAIEF, A.B.; AOUBANI, W.; THIAMRAT, M.; VODNAR, D.C*. *Carotenoid Recovery from Tomato Processing By-Products through Green Chemistry. Molecules* 2022, 27, 3771. (*corresponding author) (Q2)
10. PRECUP, G.; TELEKY, B.-E.; RANGA, F.; VODNAR, D.C*. *Assessment of Physicochemical and Rheological Properties of Xylo-Oligosaccharides and Glucose-Enriched Doughs Fermented with BB-12. Biology* 2022, 11, 553. (*corresponding author) (Q2)
11. [ȘTEFĂNESCU, B.E.; NEMES, S.-A.; TELEKY, B.-E.; CĂLINOIU, L.F.; MITREA, L.; MARTĂU, G.A.; SZABO, K.; MIHAI, M.; VODNAR, D.C.; CRIȘAN, G. Microencapsulation and Bioaccessibility](#)

of Phenolic Compounds of Vaccinium Leaf Extracts. Antioxidants 2022, 11, 674. (*corresponding author) (Q1 - AIS)

12. MITREA, L., TELEKY, B. E., LEOPOLD, L. F., NEMES, S. A., PLAMADA, D., DULF, F. V., POP, I.D., VODNAR, D. C.**The physicochemical properties of five vegetable oils exposed at high temperature for a short-time-interval. Journal of Food Composition and Analysis*, 2022, 106, 104305. (*corresponding author) (Q2)

13. PASCUTA, M.S.; VODNAR, D.C*. *Nanocarriers for Sustainable Active Packaging: An Overview during and Post COVID-19. Coatings* 2022, 12, 102. (*corresponding author) (Q2)

14. PRECUP, G.; POCOL, C.B.; TELEKY, B.-E.; VODNAR, D.C*. *Awareness, Knowledge, and Interest about Prebiotics—A Study among Romanian Consumers. Int. J. Environ. Res. Public Health* 2022, 19, 1208. (*corresponding author) (Q2)

15. Derdak, R., Sakoui, S., Pop, O. L., Vodnar, D. C., Addoum, B., Teleky, B. E., ... & El Khalfi, B. (2022). *Optimisation and characterization of α -D-glucan produced by Bacillus velezensis RSDM1 and evaluation of its protective effect on oxidative stress in Tetrahymena thermophila induced by H₂O₂. International Journal of Biological Macromolecules*, 222, 3229-3242. <https://www.sciencedirect.com/science/article/abs/pii/S0141813022023406> (Q1 - AIS)

16. SZABO, K.; RANGA, F.; ELEMER, S.; VARVARA, R.A.; DIACONEASA, Z.; DULF, F.V.; VODNAR, D.C*. *Evaluation of the Astragalus exscapus subsp. Transsilvanicus Roots' Chemical Profile, Phenolic Composition and Biological Activities. Int. J. Mol. Sci.* 2022, 23, 15161 (*corresponding author) (Q1)

17. DULF, E. H., VODNAR, D.C., DANKU, A., MARTĂU, A.G., TELEKY, B.E., DULF, F.V., RAMADAN, M.F., CRISAN, O. *Mathematical Modeling and Optimization of Lactobacillus Species Single and Co-Culture Fermentation Processes in Wheat and Soy Dough Mixtures. Frontiers in Bioengineering and Biotechnology*, 2022, 23;10:888827. (Q1)

18. SAKOUI, S., DERDAK, R., POP, O. L., VODNAR, D. C., ADDOUM, B., TELEKY, B. E., SIMON, E., ABDELHAKIM, E., SUHAROSCHI, R., ABDELAZIZ, S., EL KHALFI, B. *Effect of encapsulated probiotic in Inulin-Maltodextrin-Sodium alginate matrix on the viability of Enterococcus mundtii SRBG1 and the rheological parameters of fermented milk. Current Research in Food Science*, 2022, 5, 1713-1719. <https://www.sciencedirect.com/science/article/pii/S266592712200168X> (Q1 - AIS)

19. MITREA, L., NEMEȘ, S.A., SZABO, K., TELEKY, B.E., VODNAR, D.C*. *Guts Imbalance Imbalances the Brain: A Review of Gut Microbiota Association With Neurological and Psychiatric Disorders. Frontiers in Medicine*, 2022, 31; 9:813204. (*corresponding author) – **HIGHLY CITED PAPER** (Q2)

20. PLAMADA, D., VODNAR, D. C. *Polyphenols-Gut Microbiota Interrelationship: A Transition to a New Generation of Prebiotics. *Nutrients*, 2022, 14(1), 137. (*corresponding author) – **HIGHLY CITED PAPER (Q1)**
21. Maxim, A., Albu, V. C., Vodnar, D. C., Mihăiescu, T., Mang, Ș. M., Camele, I., ... & Borsai, O. (2022). Assessment of Tomato (*Solanum lycopersicum*) Landraces for Their Agronomic, Biochemical Characteristics and Resistance to *Phytophthora infestans*. *Agronomy*, 13(1), 21. (Q2)
22. [Dagni, A., Hegheș, S. C., Suharoschi, R., Pop, O. L., Fodor, A., Vulturar, R., ... & El Khalfi, B. \(2022\). Essential oils from *Dysphania* genus: Traditional uses, chemical composition, toxicology, and health benefits. *Frontiers in Pharmacology*, 13, 1024274. \(Q1 - AIS\)](#)
23. Socaciu, M. I., Câmpian, V., Dabija, D. C., Fogarasi, M., Semeniuc, C. A., Podar, A. S., & Vodnar, D. C. (2022). Assessing consumers' preference and loyalty towards biopolymer films for food active packaging. *Coatings*, 12(11), 1770. (Q2)
24. Păucean, A., Kádár, C. B., Simon, E., Vodnar, D. C., Ranga, F., Rusu, I. E., ... & Mureșan, V. (2022). Freeze-Dried Powder of Fermented Chili Paste—New Approach to Cured Salami Production. *Foods*, 11(22), 3716. (Q1)
25. Fărcaș, A. C., Socaci, S. A., Nemeș, S. A., Salanță, L. C., Chiș, M. S., Pop, C. R., ... & Vodnar, D. C. (2022). Cereal Waste Valorization through Conventional and Current Extraction Techniques—An Up-to-Date Overview. *Foods*, 11(16), 2454. (Q1)
26. Leopold, L. F., Coman, C., Clapa, D., Oprea, I., Toma, A., Iancu, Ș. D., Vodnar, D. C., ... & Coman, V. (2022). The effect of 100–200 nm ZnO and TiO₂ nanoparticles on the in vitro-grown soybean plants. *Colloids and Surfaces B: Biointerfaces*, 216, 112536. (Q1)
27. [Derdak, R., Sakoui, S., Pop, O. L., Vodnar, D. C., Addoum, B., Elmakssoudi, A., ... & El Khalfi, B. \(2022\). Screening, optimization and characterization of exopolysaccharides produced by novel strains isolated from Moroccan raw donkey milk. *Food Chemistry*. \(Q1 - AIS\)](#)
28. Nicolescu, A., Babotă, M., Zhang, L., Bunea, C. I., Gavrilaş, L., Vodnar, D. C., ... & Rocchetti, G. (2022). Optimized ultrasound-assisted enzymatic extraction of phenolic compounds from *Rosa canina* L. pseudo-fruits (Rosehip) and their biological activity. *Antioxidants*, 11(6), 1123. <https://www.mdpi.com/2076-3921/11/6/1123> (Q1 - AIS)
29. DUMITRAȘ, D.-A.; BUNEA, A.; VODNAR, D.C.; HANGANU, D.; PALL, E.; CENARIU, M.; GAL, A.F.; ANDREI, S. Phytochemical Characterization of *Taxus baccata* L. Aril with Emphasis on Evaluation of the Antiproliferative and Pro-Apoptotic Activity of Rhodoxanthin. *Antioxidants* 2022, 11, 1039 <https://www.mdpi.com/2076-3921/11/6/1039> (Q1 - AIS)

30. FELFÖLDI, Z.; RANGA, F.; ROMAN, I.A.; SESTRAS, A.F.; VODNAR, D.C.; PROHENS, J.; SESTRAS, R.E. Analysis of Physico-Chemical and Organoleptic Fruit Parameters Relevant for Tomato Quality. *Agronomy*, **2022**, *12*, 1232. (Q2)

31. TÓTH, Z. R., FERARU, A., DEBRECZENI, D., TODEA, M., POPESCU, R. A., GYULAVÁRI, T., SESARMAN, A., NEGREA, G., VODNAR, D.C., HERNADI, K., PAP, Z., BAIA, L., MAGYARI, K. Influence of different silver species on the structure of bioactive silicate glasses. *Journal of Non-Crystalline Solids*, **2022**, *583*, 121498

<https://www.sciencedirect.com/science/article/abs/pii/S0022309322001077> (Q1 - AIS)

32. Barta, D. G., Cornea-Cipcigan, M., Margaoan, R., & Vodnar, D. C. (2022). Biotechnological processes simulating the natural fermentation process of bee bread and therapeutic properties—an overview. *Frontiers in Nutrition*, *9*, 871896. (Q1)

33. Kádár, C. B., Păucean, A., Simon, E., Vodnar, D. C., Ranga, F., Rusu, I. E., ... & Dreţcanu, G. (2022). Dynamics of Bioactive Compounds during Spontaneous Fermentation of Paste Obtained from *Capsicum* ssp.—Stage towards a Product with Technological Application. *Plants*, *11*(8), 1080. (Q1)

34. SAKOUI, S., DERDAK, R., ADDOUM, B., POP, O.L., VODNAR, D.C., SUHAROSCHI, R., SOUKRI, A., EL KHALFI, B. The first study of probiotic properties and biological activities of lactic acid bacteria isolated from Bat guano from Er-rachidia, Morocco. *LWT*, **2022**, Volume 159, 113224.

35. IGUAL, M.; PĂUCEAN, A.; VODNAR, D.C.; GARCÍA-SEGOVIA, P.; MARTÍNEZ-MONZÓ, J.; CHIŞ, M.S. In Vitro Bioaccessibility of Bioactive Compounds from Rosehip-Enriched Corn Extrudates. *Molecules* **2022**, *27*, 1972. (Q2)

36. BOROS, Z.; BĂIEŞ, M.H.; VODNAR, D.C.; GHERMAN, C.M.; BORŞAN, S.-D.; COZMA-PETRUŢ, A.; LEFKADITIS, M.; GYÖRKE, A.; COZMA, V. Antiparasitic Action of *Lactobacillus casei* ATCC 393 and *Lactobacillus paracasei* CNCM Strains in CD-1 Mice Experimentally Infected with *Trichinella britovi*. *Pathogens* **2022**, *11*, 296. (Q2)

37. TÓTH, Z.-R.; KISS, J.; TODEA, M.; KOVÁCS, G.; GYULAVÁRI, T.; SESARMAN, A.; NEGREA, G.; VODNAR, D.C.; SZABÓ, A.; BAIA, L.; MAGYARI, K. Bioactive Properties of Composites Based on Silicate Glasses and Different Silver and Gold Structures. *Materials*, **2022**, *15*, 1655

2021 - 9 JOINT PUBLICATIONS - 2 HIGHLY CITED PAPERS (28 PUBLICATIONS IN TOTAL)

I. MARTĂU, G. A., EMOKE, T. B., RANGA, F., POP, I. D., VODNAR, D. C. *Apple pomace as a sustainable substrate in sourdough fermentation. *Frontiers in Microbiology*, **2021**, 3850. (*corresponding author) (Q2)

2. SZABO, K., TELEKY, B. E., RANGA, F., SIMON, E., POP, O. L., BABALAU-FUSS, V., ... & VODNAR, D. C.* *Bioaccessibility of microencapsulated carotenoids, recovered from tomato processing industrial by-products, using in vitro digestion model. LWT, 2021, 152, 112285. (*corresponding author) (Q1)*
3. VARVARA, R.-A.; SZABO, K.; VODNAR, D. C.* *3D Food Printing: Principles of Obtaining Digitally Designed Nourishment. Nutrients, 2021,13, 3617. (*corresponding author) (Q1)*
4. MARTĂU, G.-A.; UNGER, P.; SCHNEIDER, R.; VENUS, J.; VODNAR, D. C.*; LÓPEZ-GÓMEZ, J.P. *Integration of Solid State and Submerged Fermentations for the Valorization of Organic Municipal Solid Waste. J. Fungi, 2021, 7, 766. (*corresponding author) <https://www.mdpi.com/2309-608X/7/9/766> (Q1 - AIS)*
5. SIMON, E.; CĂLINOIU, L.F.; MITREA, L.; VODNAR, D. C.* *Probiotics, Prebiotics, and Synbiotics: Implications and Beneficial Effects against Irritable Bowel Syndrome. Nutrients, 2021, 13, 2112. (*corresponding author) – HIGHLY CITED PAPER*
6. TELEKY, B.-E.; VODNAR, D. C.* *Recent Advances in Biotechnological Itaconic Acid Production, and Application for a Sustainable Approach. Polymers, 2021, 13, 3574. (*corresponding author) <https://www.mdpi.com/2073-4360/13/20/3574> (Q1 - AIS)*
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3. CĂLINOIU, L.F, CĂTOI, A.F., VODNAR, D.C*. *Solid-State Yeast Fermented Wheat and Oat Bran as A Route for Delivery of Antioxidants*. *Antioxidants*. 2019, 8(9), 372 (*corresponding author) <https://www.mdpi.com/2076-3921/8/9/372> **(Q1 - AIS)**
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26. BORCEA, A.M., MARC, G., IONUȚ, I., VODNAR, D.C., VLASE, L., GLIGOR, F., PRICOPIE, A., PÎRNĂU, A., TIPERCIUC, B., ONIGA, O. A Novel Series of Acylhydrazones as Potential Anti-Candida Agents: Design, Synthesis, Biological Evaluation and In Silico Studies. *Molecules* 2019, 24, 184. (Q2)

2 BOOK CHAPTERS (International)

VODNAR, D. C., CĂLINOIU, L. F., MITREA, L., PRECUP, G., BINDEA, M., PĂCURAR, A. M., SZABO, K., ȘTEFĂNESCU, B. E. *A New Generation of Probiotic Functional Beverages Using Bioactive Compounds From Agro-Industrial Waste. In Functional and Medicinal Beverages. 2019,483-528. Academic Press.*

CĂLINOIU, L.F, FĂRCAȘ A., SOCACI S., VODNAR D.C* *Innovative Sources. In Nutraceuticals and Natural Product Pharmaceuticals. Elsevier.2019, 235-265. Academic Press (*corresponding author)*

9. Lista proiectelor de cercetare câștigate de candidat și valoarea acestora.

In the last 5 years, the project leader together with the research team succeeded to receive funding for **6 international research projects (min. 100.000 euro each)** and **6 national research projects (min. 100.000 euro each)**, where the total funding attracted via international research projects is **2.189.069 euro** and the total funding attracted via national research projects is **4.421.013 euro**.

International projects (Total budget 2.323.069 €)

1. Starting from January 2023, Dan Vodnar together with the research team is coordinating the first international project of the Marie Skłodowska-Curie Research and Innovation Staff Exchange type for a duration of 48 months. This one is titled “FEEDACTIV”- Development of functional fish feed based on bioactive compounds of marine and herbal origin” (Grant Agreement no 101086261). Project budget: **1.444.400 €**.

2. Starting from November 2023, Dan Vodnar together with the research team are leaders of the work package in the international project Marie Skłodowska-Curie Research and Innovation Staff Exchange entitled „RIA4FOOD - Multi-Actor Research and Innovation Approaches for Functional Food”. Project budget: **1.600.800 €**. **Buget USAMV: 211.600 €**.

3. We are currently responsible partner of another European project Marie Skłodowska-Curie (H2020-MSCA-RISE-2020 Type of Action: MSCA-RISE Acronym: FRIETS. 2021-2024). Project budget: **2.433.400 €**. **Buget USAMV: 174.800 €**.

4. H2020. Type of Action: ERASMUS-EDU-2022-PI-FORWARD Acronym: Geek4Food. 2022-2025 – *Project 101087203*. Workpackage leaders. Project budget: **796.974 €**. **Buget USAMV: 78.269 €**.

5. Manunet III- Non-Act. NOvel Natural Antimicrobial CoaTings for food production chain. 2018-2020. **Project budget: 469.000 €**. **Buget USAMV: 140.000 €**

6. Manunet II- TOMATOCYCLE. 34/14.06.2017. Sustainable exploitation of tomato processing industry by-products. 2017-2020. **Project budget: 567.000 €**. **Buget USAMV: 140.000 €**

7. CEEPUS-Resilient management of bioactive compounds from plants and organic wastes in Middle-Europe. 2021-2023.

8. We coordinated the CASEE Fund for Incentives project “Bio-system for cereal by-products-derived antioxidants production” 2020-2022. **Budget: 4.000 €**

9. Automatisiertes Aquaponic-System zur nachhaltigen Erzeugung frischer Lebensmittel”, FKZ DBU: 33716/01-35 (Acronym: PlantGeek). 2017-2019. **Project budget: € 130.000 €**

National projects (Total budget 5.451.013 €)

1. Project PN-III-P1-1.1-TE-2019-1748. “Bio-sistem pentru producția de vanilină din reziduuri cerealiere”. Funding: UEFISCDI. **Project budget: 100.000 €**

2. Project PN-III-P1-1.2-PCCDI-2017-0056. “Model de colaborare functional intre organizatii publice de cercetare si mediul economic cu scopul acordarii de servicii stiintifice si tehnologice de inalt nivel in domeniul bioeconomiei”. Funding: UEFISCDI. **Project budget: 1.150.000 €**

3. 14 PFE-2022-2024. “Stimularea performanței instituționale a USAMVCN, prin susținerea, dezvoltarea și creșterea activităților de cercetare post-pandemie”. Funding: MCDI- UEFISCDI. **Project budget: 986.000 €**

4. 37 PFE-2018-2020. “Cresterea performantei institutionale prin mecanisme de consolidare si dezvoltare a directiilor de cercetare din cadrul USAMVCN”. Funding: MCI- UEFISCDI. **Project budget: € 610.000**

5. Project POC, P-37_637/2016. “Dezvoltarea și modelarea bioproceselor pentru obținerea de 1,3-Propanediol (PD) și acid citric din glicerol brut, cu aplicații în industria alimentară” – ProGlyCom. Funding: ANCSI. **Project budget: 1.440.395 €.**

6. Project PN-II-PT-PCCA-2013-4-0743, 2014-2017. “O nouă generație de băuturi probiotice funcționale cu impact asupra sănătății gastrointestinale”. Funding: UEFISCDI. **Project budget: 644.618 €.**

7. Project PN-III-P1-1.1-TE-2016-0661. “Reducerea zaharului si cresterea biodisponibilitatii compusilor din subproduse alimentare in produsele dulci de panificatie”. Funding: UEFISCDI. **Project budget: 100.000 €**

8. Project PN-III-P2-2.1-PED-2016-1237, 17 PED/2017. “Utilizarea eficientă a glicerolului brut de biodiesel în producția de acid lactic”. Funding: UEFISCDI. **Project budget: 120.000 €**

In the last 5 years, each member of the team (except the PhD students) submitted research projects in the UEFISCDI national competitions, and the success rate was high, respectively: 4 PD projects (Laura Mitrea, Szabo Katalin, Ștefănescu Bianca-Eugenia and Teleky Bernadette) and 1 TE project funded (Lavinia Călinoiu), as follows:

9. “Fortificarea in situ cu vitamina B12 a suproduselor cerealiere”, project no. TE7/2022, PN-III-P1-1.1-TE-2021-1052 (PNCDI III) – Acronym B12. **Project budget: 100.000 €**

10. “Obținerea acidului succinic din ulei alimentar rezidual cu ajutorul drojdiilor oleofile”, project no. PD35/2020, PN-III-P1-1.1-PD-2019-0679 - Acronym *SuccinYst*. **Project budget: 50.000 €**

11. “Proprietățile bioactive ale extractelor din rădăcini de *Astragalus exscapus* ssp. *Transsilvanicus* project no. PD 34 din 06/08/2020 (PN-III-P1-1.1-PD-2019-0760) – Acronym Bio-Astra. **Project budget: 50.000 €**

12. “Solid-state fermentation of food industry derived by-products, and downstream process development for itaconic acid production”, project no. PD 2/2022, PN-III-P1-1.1-PD-2021-0672 (PNCDI III) – Acronym Bio-Cycle. **Project budget: 50.000 €**

13. “Evaluarea migrării polifenolilor din biofilme în alimente”, proiect no. PD 7/2022, PN-III-P1-1.1-PD-2021-0444 - Acronym MIGRATION. **Project budget: 50.000 €**

10. Lista brevetelor depuse și a celor acceptate, dacă este cazul.

1. Patent of invention: nr. RO 132023/2021. “Compoziția și procedeul de obținere a jeleului probiotic”.

Authors: **Vodnar Dan Cristian**, Pop Oana Lelia, Socaciu Carmen

2. Patent of invention. RO 135223 / 2021. “Compoziția și procedeul de obținere a acidului citric biogenic microîncapsulat”. Authors: **Vodnar Dan Cristian**, **Mitrea Laura**, Dulf Francisc Vasile, Trif Monica, Socaci Sonia, Pop Oana Lelia, Simon Elemer, **Vodnar (Ștefănescu) Bianca Eugenia**.

3. Patent of invention: RO 135220 / 2021. “Compoziția și procedeul de obținere a 1,3-Propandiolului biogenic microîncapsulat”. Authors: **Vodnar Dan Cristian**, **Mitrea Laura**, Dulf Francisc Vasile, Trif Monica, Socaci Sonia, Pop Oana Lelia, Simon Elemer, **Vodnar (Ștefănescu) Bianca Eugenia**.

4. Patent application OSIM nr A00039/2020. “Procedeu de izolare, caracterizare și obținere a unor produse bacteriene de *Lactobacillus salivarius*”. Authors: Dumitru Mihaela, Habeanu Mihaela, Chelaru Raluca, Sorescu Ionut, Georgeta Ciurescu, Tabuc Cristina, Gheorghe Anca, **Vodnar Dan Cristian**, Simon Elemer.

5. Patent application OSIM nr. A00322/ 9.06.2020. “Nanostructuri pe bază de PHBV și nanoparticule de ZnO dopate cu Fe și procedeul de obținere a acestora”. Authors: Stefan Maria Viorica, Râpă Maria, Pană Ioan Ovidiu, **Vodnar Dan Cristian**, Matei Ecaterina, Barta Daniel Gabriel, Popa Adriana Paula.

6. Patent of invention: RO 129492/2017. “Eticheta cu acțiune antimicrobiană și procedeul de obținere a acesteia”. Authors: **Vodnar Dan Cristian**, Pop Oana Lelia, Socaciu Carmen.

7. Patent of invention: nr RO 128966/2017. “Biofilm cu acțiune antimicrobiană, procedeul de obținere și utilizări”. Authors: **Vodnar Dan Cristian**, Socaciu Carmen.

8. Patent application OSIM nr. A/00699/31.10.2022. “Caracterizarea și procedeul de obținere a nanoparticulelor de oxid de fier cu *Lactobacillus fermentum*”. Authors: Oana Lelia Pop, Amalia Mesaros, Calina Ciont, **Vodnar Dan Cristian**.

* Se redactează în limba engleză. Prin excepție, redactarea cererii de premiere se face în limba română pentru cererile din domenii cu specific românesc: limba și literatura română și dreptul românesc.

** Rezultatele activității de cercetare sunt evaluate conform Anexei nr. 3 la Regulamentul de organizare și funcționare a programului Gala Cercetării Românești.