



**AMERICAN ROMANIAN ACADEMY OF ARTS AND SCIENCES
(ARA)**

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Book of Abstracts

the 45th Congress of the American Romanian Academy of Arts and Sciences

June 3 -5, 2024

Sala Senatului, Rectorat

National University of Science and Technology,

POLITEHNICA Bucuresti

313 Splaiul Independentei, sector 6, Bucuresti

SESSION 1

Session Chairs: Ruxandra Vidu

Location: Sala Senatului, Rectorat

11:00 – 11:30

Keynote Presentation

“Enhancing the Romanian Higher Education Comparative Advantage: The Role of the Diasporas”

Dr. Steve O. Michael, Professor, Rector & CEO, Danubius International University Galati, Romania

Abstract

In an increasingly global society, national higher education systems and their institutions have been shoved into a global market as evidenced by the rising popularity of global rankings of institutions and the growing competition for international students and scholars. Hence, there is an emergent need for prudent higher education policy makers and leaders to question and assess their system comparative advantages. The purpose of this presentation is to provide an anecdotal assessment of the Romanian higher education comparative advantage, examine barriers limiting advantages, and provide recommendations that could enhance the system advantage. The presentation concludes with a call to the Romanian academic diasporas who, with their vast intellectual talents and academic resources, could contribute toward the enhancement of the system advantage.

Dr. Michael's Bio:

[file:///Users/rector/Downloads/Dr.%20Steve%20O.%20Michael's%20Bio%20\(5\).pdf](file:///Users/rector/Downloads/Dr.%20Steve%20O.%20Michael's%20Bio%20(5).pdf)

11:30 – 12:00

Keynote Presentation

Recent achievements of researchers from the institutes of the Romanian Academy

Acad. Ioan Dumitrache, Academia Romana, Bucuresti, Romania

SESSION 2

Session Chairs: Ileana Nicoleta Popescu

Location: Sala Senatului, Rectorat

13:30 – 15:30

The Romanian exile and its valences. Interdisciplinary perspectives.

Lucian Dindirică, Laviniu Costinel Lăpadat, Cosmina Mirabela Păunescu, Elena Bălășanu, Mihaela Călinescu, Maria Cristina Gelep,
Muzeul Cartii si Exilului Romanesc, Craiova, Romania

15:30 – 15:45

Coffe Break

Location: Hall, Sala Senatului, Rectorat

15:45 – 16:00

Designing Microfluidic Devices for Sensing Applications

Ileana Nicoleta Popescu¹, Badriyah Alhalaili^{2*}, Ruxandra Vidu^{3,4*}

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Abstract: Recent research works and trends in designing and fabrication of microfluidic devices (sensing devices) and their applications in different fields from biomedical applications (biological analysis and detection, single-cell manipulation), and pollution /contamination analysis, to drug discovery and delivery are reviewed. In alignment with the tendency for miniaturization and integration into “lab on a chip” devices, to reduce reagents, energy, and

implicitly processing costs, (i) the most common and new materials used as components for optical and electrochemical devices and (ii) designing and fabrication of microfluidic devices used as sensors, including microwire molding method, are presented.

Keywords: Microfluidic Optical/ Electrochemical Devices, Sensors, Fabrication techniques, Microwire molding technique.

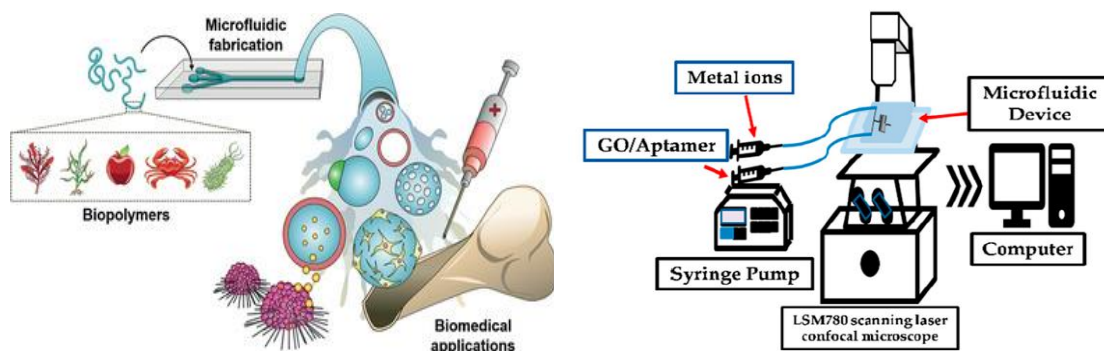


Figure 1. Schematic presentation of different applications of microfluidic devices used as sensors
(a) biomedical applications; (b) environmental monitoring (heavy metal ions detection)

Selected References:

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- Alhalaili, B., Popescu, I. N., Rusanescu, C. O. & Vidu, R. (2022). Microfluidic Devices and Microfluidics-Integrated Electrochemical and Optical (Bio) Sensors for Pollution Analysis: A Review. *Sustainability*, 14(19), 12844.

16:00 – 16:15

Advancements in Metal-Oxide Semiconductor Thin Films for Energy Applications

Najoua Kmoun-Turki, Prof., Physics Condensed Matter Laboratory,
Faculty of Science Tunis, Univ. of Tunis Elmanar, Tunisia
Ruxandra Vidu, Assoc.Prof., POLITEHNICA Bucuresti,

16:15 – 16:30

Overview of Multifunctional (Ultra-)Lightweight Materials for a Sustainable Future

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Abstract: In alignment with the trend of continuous development of high-performance materials, materials that can perform multiple functions and be environmentally friendly, in this paper, we briefly review the recent developments of lightweight and ultra-lightweight multifunctional materials. We mainly focus on their main types of low-density multifunctional materials, production techniques, and applications, in the context of a sustainable future. Ultra-light materials are classified from a structural point of view into three main groups (aerogels, foam, and microlattice), and, from the point of view of composition, they can be based on ceramic, metallic, or polymeric materials. In this overview, among these materials, we have paid special attention to silica, carbon or composite aerogels and metal, ceramic (carbon), and polymer foams.
Keywords: Multifunctional materials, Aerogels, Foams, Ultralight materials, Micro/Nanolattices.



Figure 1. Different types of lightweight and ultralight materials.

Selected References:

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16:15 – 16:30

Economic evaluation of efficiency in the health system

Negruta Ludmila, Raevschi Elena, State University of Medicine and Pharmacy
“Nicolae Testemitanu”, Chisinau, MD-2004, Republic of Moldova.

Abstract: The health system is the cornerstone of a healthy and prosperous society. However, in the context of limited resources and growing demand for health services, it becomes essential to assess the effectiveness of the health system. The economic evaluation of public health services is a way of finding answers to three fundamental questions of health economics: what services should be provided, how should these services be provided, and for whom the services have to be provided. Economic evaluation is an important method for measuring the performance of the system, highlighting the costs and benefits associated with its different aspects, and thus allows us to answer the question of how to use limited resources in the face of unlimited needs and wants in the context of increasingly complex health services.

Economic evaluation as a process, compares two or more alternatives from the point of consumed resources and obtained results. It involves two major points: from the one side, analysis of at least two alternatives, and on the other side, simultaneous analysis not only of the costs, the obtained results. The main principle that stands on an economic basis consists of evaluating some alternatives, studying each of them, of necessary resources and prognoses results. Costs show necessary resources, and results are obtained from some kind of consequences: benefits, effects, or associated utilities for each health state.

In conclusion, we consider that economical evaluation is a main instrument in health system management, which offers vital information for making the decisions in health field. By cost evaluation and benefits of different interventions and politics of health, can be assured efficient use of resources and improvement of health state of the population in conditions in which services became more and more complex.

Key words: Medicine, Health, Cost, Benefits.

TUESDAY JUNE 4, 2024

SESSION 3

Session Chairs: George Mihalas

Location: Sala Senatului, Rectorat

10:00 - 10:30

Keynote Presentation

Current Trends in Metallic Orthopedic Biomaterials

Iulian Antoniac¹

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Biomaterials offer the surgeon a powerful set of clinical tools for patient treatment and are found in virtually every instrument, device, implant, or piece of equipment in the operating room. A significant number of materials including metallic, ceramics, polymers, composites, and some nanomaterials exist and are used to obtain various medical devices for current orthopedic surgery.

Due to their high mechanical properties, metallic biomaterials have been used for applications in which load-bearing capability is the major deciding factor. Skeletal applications have, therefore, been the main areas of interest, as the vast majority of orthopedic implants are made from metals, at least partially. Similar to other types of biomaterials, the most important aim in the development of metallic biomaterials is to achieve multiple advanced functionalities. In the case of orthopedic implants, those advanced functionalities should ultimately result in improved longevity of permanent implants, enhanced tissue regeneration performance of bone substitutes, more effective reconstruction of large bony defects, and minimized risk of implant-associated infections. The current research trends on metallic biomaterials are, therefore, focused on achieving the above-mentioned goals. New trends in metallic biomaterials, surface modification, and characterization techniques will be reviewed and discussed with particular reference to their relevance in biomaterials-tissue interactions phenomena.

Not at the end, different experimental results obtained after the failure analysis of retrieved orthopedic implant will be shown in order to explain the great potential of some microscopical techniques like scanning electron microscopy.

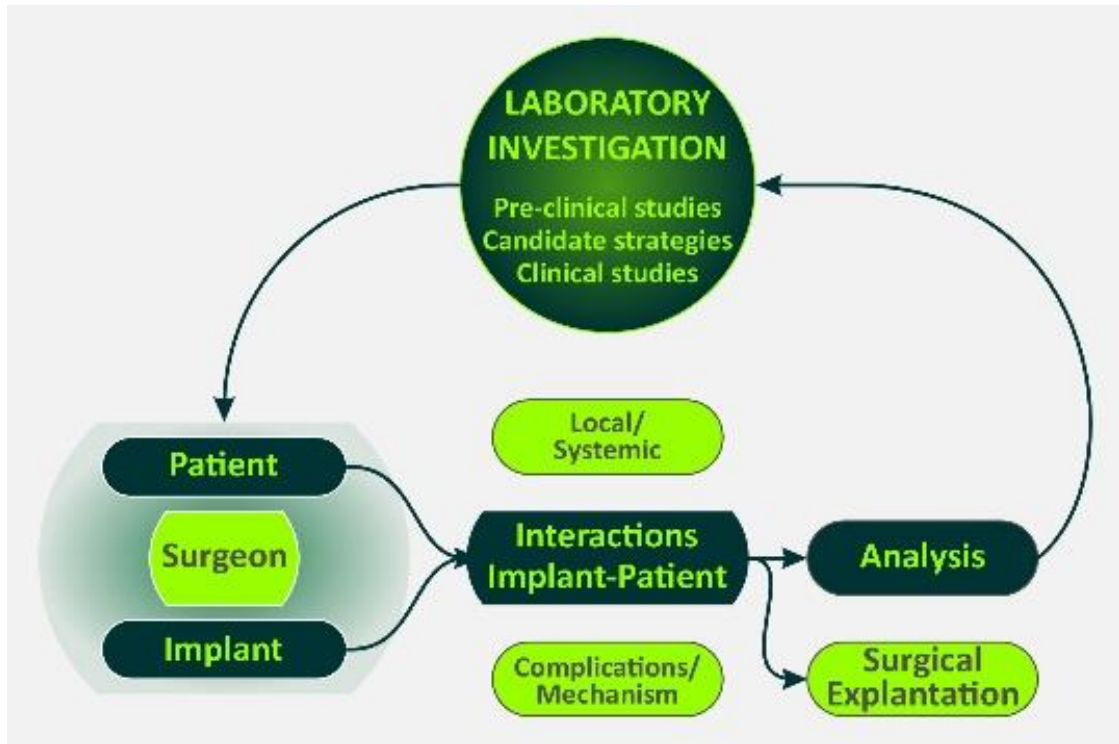


Figure 1. Role of orthopedic implant retrieval and their evaluation.

The current research trends on metallic biomaterials include some classical directions like development of innovative implants where metallic biomaterials are combined with ceramic or polymeric materials, or bio-functionalized surfaces that could improve bone regeneration performance while minimizing the risk of implant-associated infections. As innovative directions appear to be the introduction of the biodegradable metals for trauma implants and scaffolds, or application of advanced additive manufacturing techniques to design and fabricate biomaterials with favorable properties and performance.

Keywords: Engineering, Biomaterials, Implant, Orthopaedic, Retrieval analysis, Surface.

References

1. Antoniac I; editor; Biologically responsive biomaterials for tissue engineering, Series: Springer Series in Biomaterials Science and Engineering, Vol. 1, Ed. Springer, 2013, ISBN 978-1-4614-4327-8.
2. Antoniac I; editor; Handbook of Bioceramics and Biocomposites, Vol. 1-2, Springer International Publishing, 2016, ISBN: 978-3-319-12459-9.

10:30 – 11:00

Keynote Presentation

Navigând prin Intersecția dintre Tehnologie și Medicină: Perspective privind Adoptarea IA

Gheorghe Ioan MIHALAS^{1,2,3}

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Introducere. Tehnologia a dezvoltat numeroase aplicații pentru medicină. Cel mai adesea erau instrumente concepute de ingineri sau cercetători așa cum își imaginau ei utilizarea lor în practica medicală. Totuși, acestea nu se suprapun ce ceea ce doctorii așteaptă de la tehnologie; există uneori sarcini simple sau de rutină care ar fi foarte utile dar la care nu s-au gândit tehnicienii, altelei doctorii solicită lucruri care par simple la prima vedere, simple pentru oameni, dar foarte dificil de rezolvat cu actualele cunoștințe sau metode. Această lucrare prezintă o descriere sistematică și detaliată a ceea ce Inteligența Artificială (IA) poate oferi sectorului medical, comparativ cu ceea ce doctorii așteaptă de la inteligența artificială.

Metode. Ca sursă primară s-a utilizat un set de articole dedicate ratei de adopție a diferitelor instrumente IA în sănătate. S-a construit o scară-clasament a celor mai utilizate instrumente IA în sănătate iar aplicațiile cu rată scăzută de utilizare au fost analizate și clasificate în două clase pentru a fi discutate – aplicații avansate, bine dezvoltate dar subutilizate și de asemenea s-a încercat identificarea necesităților mai puțin explorate de aplicații (cvasi-neglijate de IA).

Rezultate. Cele mai importante aplicații care nu au atins o rată acceptabilă de utilizare ar fi: suportul deciziei clinice, medicina de precizie, monitorizarea pacienților de la distanță și telemedicina și sănătatea virtuală, în timp ce ariile mai puțin explorate acoperă mai multe direcții – activități clinice, de sănătate publică sau administrative: îngrijirea geriatrică, sănătatea mintală, bolile rare, disparități în domeniul sănătății, senzorii portabili și analiza datelor, dar și pregătirea rapoartelor, programările sau codificările pentru asigurări.

Discuții. S-au analizat în detaliu cauzele atât pentru aplicațiile subutilizate cât și pentru cele „orfane”. Originea amândurora poate fi fie de natură tehnică, fie provocări non-tehnice. Pentru aplicațiile subutilizate ne confruntăm cu aspecte de integrare, interoperabilitatea datelor, complexitatea sau absența transparenței în decizii – ca obstacole tehnice, în timp ce pentru direcțiile cvasi-neglijate trebuie să considerăm

subestimarea impactului sarcinilor simple sau prioritizări eronate, mutându-se adesea accentul pe cercetarea de vârf sau pe big data și sisteme complexe.

Concluzii. Lucrarea evidențiază unele disparități actuale în ceea ce privește eforturile de realizare a aplicațiilor inteligenței artificiale în medicină, scoțând la lumină teme cu impact puternic în practica medicală dar mai puțin abordate până acum, care pot deveni fie subiecte ale proiectelor de cercetare, fie ale colectivelor din universități, sau a companiilor specializate în aplicații AI în domeniul medical.

Cuvinte cheie: inteligența artificială, aplicații medicale, adoptarea instrumentelor IA

Referințe:

- [1] Aldwean A, Tenney D. (2024) Artificial Intelligence in Healthcare Sector: A Literature Review of the Adoption Challenges. *Open Journal of Business and Management*, 12, 129-147. doi: 10.4236/ojbm.2024.121009.
- [2] Roppelt JS, Kanbach DK, Sascha Kraus S. (2024) Artificial intelligence in healthcare institutions: A systematic literature review on influencing factors. *Technology in Society*, 76, doi.org/10.1016/j.techsoc.2023.102443.
- [3] Davenport TH, Glaser JP. (2022) Factors governing the adoption of artificial intelligence in healthcare providers. *Discov Health Syst.* 1(1):4. doi: 10.1007/s44250-022-00004-8.

Navigating the Intersection of Technology and Medicine: Perspectives on AI Adoption

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Introduction. Technology has developed several tools for medical applications. Most of the times there were tools designed by engineers or scientists as they have imagined their use in medical practice. However, this does not overlaps with what do doctors expect from the technology; sometimes there are simple or routine tasks which would be quite useful but the technicians didn't think about, other times doctors would ask things which look simple at a first glance, simple for humans, but might be very difficult to solve with present knowledge or methods. This paper presents a systematic and detailed description of what Artificial Intelligence (AI) can offer to the medical sector, as compared with what do doctors expect from artificial intelligence.

Methods. A set of articles dedicated to adoption rate of various AI tools in healthcare has been used as a primary source. An estimative ranking scale of mostly used AI tools in

healthcare was developed and the applications with low rate adoption were analyzed and classified into the two classes to be discussed – well developed advanced applications but underutilized and also tried to identify less explored needs for applications (domains quasi-neglected by AI).

Results. The most important applications that have not yet reached or acceptable adoption rate would be: clinical decision support, precision medicine, remote patient monitoring and telemedicine and virtual health, while the less explored areas cover several directions – clinical, public health or and administrative activities: geriatric care, mental health, rare diseases, healthcare disparities, wearable sensor data analysis, but also report preparation, scheduling or insurance coding.

Discussions. The causes for both underused applications and ‘orphan’ applications are analyzed in detail. The origin for both can be either technical or non-technical challenges. For the underused applications we face integration issues, data interoperability, complexity and lack of transparency in decisions as technical hurdles, while for the quasi-neglected areas we should consider an underestimation of the impact of simple tasks, or misaligned priorities, often moving the focus on cutting-edge research or on big data and complex systems.

Conclusions. The work highlights some current disparities regarding the efforts to realize the applications of artificial intelligence in medicine, bringing to light themes with a strong impact in medical practice but less addressed so far, which can either become subjects of research projects or of collectives from universities, or of companies specialized in AI applications in the medical field.

Keywords: artificial intelligence, medical applications, AI tools adoption

References

- [4] Aldwean A, Tenney D. (2024) Artificial Intelligence in Healthcare Sector: A Literature Review of the Adoption Challenges. *Open Journal of Business and Management*, 12, 129-147. doi: 10.4236/ojbm.2024.121009.
- [5] Roppelt JS, Kanbach DK, Sascha Kraus S. (2024) Artificial intelligence in healthcare institutions: A systematic literature review on influencing factors. *Technology in Society*, 76, doi.org/10.1016/j.techsoc.2023.102443.
- [6] Davenport TH, Glaser JP. (2022) Factors governing the adoption of artificial intelligence in healthcare providers. *Discov Health Syst*. 1(1):4. doi: 10.1007/s44250-022-00004-8.

11:00 – 11:15

Spatial Determinants of Health: Opioid Overdose and Mental Health Outcomes in Harris County, Texas

Nicole Cevallos¹, Serenity Fanene¹, Will Chen¹, Consuelo Walss-Bass², **Gabriela Wilson^{1*}**

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Substance use across the United States has drastically increased during the COVID-19 pandemic, resulting in substantial rates of overdose cases and substance abuse reports. Through geographic information system (GIS) tools, this study explores the characteristics of built environments and the mapped-out overdose cases against indicators of mental health distress, social vulnerability, and access to healthcare. Using data from UT Houston and Harris County public data, we assess zip code level environment through multilevel analysis mapping out all social determinants of health. Our multilevel analysis maps the social determinants of health against overdose incidents, revealing significant geographic disparities. These disparities highlight the need for targeted public health interventions sensitive to place-based factors. The correlation between low median incomes and higher overdose rates in predominantly Black and Hispanic neighborhoods underscores the urgency of addressing economic and social inequities as part of the broader strategy to combat the substance use crisis. By identifying specific patterns of substance use and their associations with various demographics, this study reinforces the importance of a spatially informed approach and place-based factors in developing effective and equitable public health policies and interventions.

Keywords: Overdose; Built environment; Spatial determinants; Social vulnerability; ArcGIS

SESSION 4

Session Chairs: Florian Olteanu

Location: Sala Senatului, Rectorat

11:30 – 11:45

Ionut Cojocaru, PhD, Adj.Prof., Secția de Științe Istorice și Arheologice,
Universitatea POLITEHNICA Bucuresti, Romania

11:45 – 12:00

Romanian Heroes of the American Civil War

Florian Olteanu, PhD, Assist.Prof., University of Craiova, Faculty of
Social Sciences, ISPRI Department, Romania

12:00 – 12:15

Descentralizarea ca instrument de atenuare a conflictelor etnopolitice: cazul Republicii Moldova

Mihai Roscovan, Conf., PhD ec., BCI, USM, Chisinau,
mihai.roscovan@bci.md

Abstract

Scopul lucrării: Fundamentarea politicilor de descentralizare, ce ar conduce la soluționarea conflictelor entopolitice din Republica Moldova.

Design-ul/metodologia/abordarea: Analiza situației existente în relațiile guvernului central cu Unitatea Teritorială Autonomă Găgăuzia și Regiunea Transnistria. Aplicarea teoriei descentralizării pentru soluționarea conflictelor etnoculturale .

Constatări: Procesul de aderare a Republicii Moldova la UE poate fi împiedicat de tendințe separatiste din autonomia găgăuză și regiunea transnistreană. Legislația privind crearea UTA Găgăuzia este în contradicție cu modelul european de protecție a minorităților naționale și conține mai multe ambiguități ce contravin Constituției RM. Din 2015 în Republica Moldova s-au stabilit două sisteme diferite pentru formarea bugetelor locale care favorizează Găgăuzia din contul altor APL. Deși beneficiază de preferințele Acordului de Asociere RM-UE regiunea separatistă din Transnistria se împotrivesc alinierii la legislația națională a RM. Descentralizarea și autonomia sunt concepte strâns legate. Autonomia locală atrage după sine descentralizarea administrativă, autonomia fiind un drept, iar descentralizarea un sistem care

implică autonomia. Integrarea Găgăuziei și Transnistriei în sistemul unic al relațiilor interbugetare necesită revizuirea legislației privind autonomia găgăuză în conformitate cu modelele europene.

Limitări/sugestii de cercetare: Lucrarea dată expune viziunea asupra necesității aplicării descentralizării ca un mecanism inovator pentru atenuarea tensiunilor interetnice și menținerea integrității statale.

Valoarea aplicativă: constă în oferirea unui cadru metodologic pentru dezvoltarea politicilor de descentralizare și soluționare a conflictelor interetnice, precum și în identificarea unor soluții specifice pentru Republica Moldova.

Noutatea și originalitatea științifică: Lucrarea aduce o contribuție originală în domeniul științelor administrative prin promovarea unei perspective inovatoare și interdisciplinare asupra descentralizării în Republica Moldova.

Mediul implementării: Cercetarea în cauză este efectuată în cadrul școlii doctorale științe sociale și ale educației din cadrul Universității de Stat din Moldova.

Sustenabilitatea: Problematika soluționării conflictelor interetnice este actuală și importantă în contextul aderării Republicii Moldova la Uniunea Europeană.

Cuvinte Cheie: Decentralizare, deconcentrare, autonomie, conflicte etnopolitice, relații interbugetare.

JEL: H11, H77, P21, R51

Decentralization as a tool to mitigate ethnopolitical conflicts: the case of the Republic of Moldova

Mihai Roscovan, Conf., PhD ec., BCI, USM, Chișinău,
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Abstract

The purpose of the paper: The foundation of the decentralization policies, which would lead to the entopolitical conflicts resolution in the Republic of Moldova.

Design/methodology/approach: Analysis of the existing situation in the relations of the central government with the Autonomous Territorial Unit of Gagauzia and Transnistria Region. Application of the theory of decentralization for the ethnocultural conflicts resolution.

Findings: The accession process of the Republic of Moldova to the EU may be hindered by separatist tendencies in the Gagauz autonomy and the Transnistrian region. The legislation regarding the creation of UTA Gagauzia is in contradiction with the European model for the protection of national minorities and contains several ambiguities that contravene the Constitution of the Republic of Moldova. Since 2015, in the Republic of Moldova, two different systems have been established for the formation of local budgets that favor Gagauzia at the

expense of other LPAs. Although it benefits from the preferences of the RM-EU Association Agreement, the separatist region of Transnistria opposes alignment with the national legislation of the RM. Decentralization and autonomy are closely related concepts. Local autonomy entails administrative decentralization, autonomy being a right, and decentralization a system that implies autonomy. The integration of Gagauzia and Transnistria into the single system of inter-budgetary relations requires the revision of the legislation on Gagauz autonomy in accordance with European models.

Research Limitations/Suggestions: The given paper exposes the vision of the need to apply decentralization as an innovative mechanism for mitigating inter-ethnic tensions and maintaining state integrity.

Applicative value: Providing a methodological framework for the development of decentralization policies and the resolution of inter-ethnic conflicts, as well as in the identification of specific solutions for the Republic of Moldova.

Scientific novelty and originality: The work makes an original contribution in the field of administrative sciences by promoting an innovative and interdisciplinary perspective on decentralization in the Republic of Moldova.

Implementation environment: The research in question is carried out within the doctoral school of social sciences and education within the State University of Moldova.

Sustainability: The problem of solving inter-ethnic conflicts is current and important in the context of the accession of the Republic of Moldova to the European Union.

Keywords: Decentralization, deconcentration, autonomy, ethnopolitical conflicts, interbudgetary relations.

SESSION 5

Session Chairs: **Mircea Alexandru Mateescu**

Location: **Sala Senatului, Rectorat**

14:00 – 14:30

Keynote Presentation

Carboxymethyl-Starch: a new excipient as a platform for pharmaceutical and biomedical applications

Mircea Alexandru MATEESCU*, Pompilia ISPAS-SZABO

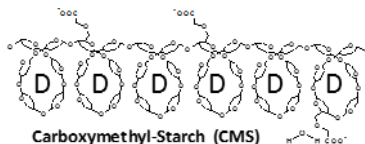
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There are reported new excipients based on natural starting material: *i.e.* starch, that can generate, by proper modifications, supramolecular self-assembled arrangements as matrices applicable for new pharmaceutical forms and as materials for particular biomedical treatments.

We are proposing Carboxymethyl starch (**CM-Starch, CMS**) as: 1a) monolithic matrices for orally administered drug solid dosage forms, 1b) coating materials for pharmaceutical tablet forms and 2) microspheres as carriers of bioactive agents. The CMS was obtained by starch treatment with sodium monochloro-acetate. The main features of this CMS material are: pH Responsiveness, Self-assembling and stabilization by hydrogen bonding, Susceptibility to enzymatical hydrolysis by alpha-amylase (amylolysis), Biocompatibility and Biodegradability, Mucoadhesive properties.

The pH-responsiveness is one of the major characteristics and is related to the ability of



Carboxymethyl-Starch (CMS)

carboxylic groups to be protonated in gastric acidity, forming an outer gel layer that acts as a barrier protecting the monolithic tablets against gastric fluid and preventing the gastric acid to penetrate the tablet. After gastric residence, the solid dosage forms will continue the

intestinal transit where, due to the increased pH, will be deprotonated, swollen, eroded and possibly disintegrated or dissolved with the release of drug. In addition to gastro-protection, the CM-Starch allows the control of the drug release with possibility of chronodelivery, important for personalized medicine (1). Furthermore, the CM-Starch has strong mucoadhesive properties, particularly high at lower pH (useful for vaginal formulations). Carboxymethyl starch mucoadhesive microspheres as gastroretentive dosage forms have been also produced as carriers of drugs with adsorption at gastric level, such as Furosemide (2). Hydrophobic drugs (**D**) are

difficult to formulate. Consequently, there is an unmet need to develop safe and simply to administer tablet forms loaded with high amounts of such drugs. It was found that our CM-Starch exhibits expanded V-type helices (larger than those of corresponding native and gelatinized starch) and with relatively non-polar inner surfaces that can hold inclusion hydrophobic agents (*e.g.* certain fatty molecules) such as Omega-3 and lecithin (3). Our Xray diffraction data confirmed the conversion from B-type to expanded V-type by carboxymethylation.

Acknowledgements: *NSERC-CRSNG Canada, Discovery programs, for supporting this research.*

Keywords: Chemistry & Medicine, Excipients, Carboxymethyl-Starch, Pharmaceutical formulations, Controlled Drug Release, Chronodelivery, Gastroretentive microspheres, , Mucoadhesion.

References

[1] Ispas-Szabo P, De Koninck P, Calinescu C, Mateescu M.A, Carboxymethyl Starch Excipients for Drug Chronodelivery. *AAPS Pharm. Sci. Tech.* 8, 1673-1682, 2017. [2] Lemieux M, Gosselin P, Mateescu MA. Carboxymethyl starch mucoadhesive microspheres as gastroretentive dosage form. *Int J Pharm.* 496, 497-508, 2015. [3] Friciu M, Canh Le T, Ispas-Szabo P, Mateescu M.A, Carboxymethyl starch and lecithin complex as matrix for targeted drug delivery: I. Monolithic Mesalamine forms for colon delivery. *Eur. J. Pharm. Biopharm.* 85, 521- 530, 2013.

14:30 – 14:45

“Innovative Methods in Cranial Surgery”

Ileana Mates, PhD, Med.Eng., Central Military Emergency University Hospital, Bucharest, Romania

14:45 – 15:00

Trends in Prevalence of Noncommunicable Disease Behavioural Risk Factors in the Republic of Moldova

Raevschi Elena, Negruta Ludmila

State University of Medicine and Pharmacy “Nicolae Testemitanu”, Chisinau, MD-2004, Republic of Moldova.

Abstract: Noncommunicable diseases (NCDs) are the main issues of Public Health in terms of premature mortality at the global and national level. World Health Organization determined behavioral risk factors as main intervention in order to prevent and control noncommunicable

diseases setting targets, as follows: a 30% relative reduction in prevalence of current tobacco use, at least 10% relative reduction in harmful alcohol consumption, a 10% relative reduction in prevalence of insufficient physical activity, halting the rise in obesity by 2025 [1].

The aim of the study was to evaluate the trends on prevalence of noncommunicable diseases behavioral risk factors in the Republic of Moldova over the years 2013-2021 in order to assess the achievements of national targets reduction adjusted to the global targets. The study was performed based on two nationwide surveys (STEPS 2013 and STEPS 2021) on the prevalence of NCDs risk factors among the adult population aged 18-69 years in the Republic of Moldova [1,2].

In conclusion, the results of the evaluation of the trends on prevalence of NCDs behavioral risk factors in the Republic of Moldova confirm the achievement of the global targets regarding relative reduction of harmful alcohol consumption and relative reduction of physical inactivity, as well. However, the targets for reducing the current use of tobacco and halting the rise in obesity were not achieved, moreover, increasing trends have been observed highlighting the need to optimize efforts at the national level in this regard.

Keywords: Medicine, Noncommunicable diseases, Behavioural Risk Factors.

15:00 – 15:15

Senior Associations in the UN Decade (2021-2030): Healthy Aging.

Dumitru TODOROI, Prof.univ., Dr. hab., Mem.cor. ARA, Association "ASEM Seniors", AESM, Chisinau, Republic of Moldova, todoroi@ase.md,
ORCID: 0000-0001-8823-6015

Abstract.

The Senior Association is an eco-friendly community of seniors around retirement at the parent enterprise. Association "ASEM Seniors" is a community of employed teachers (seniors during the last 5 years of activity until retirement), associates (retired seniors with reduced activity) and affiliates (volunteer retired seniors) of the Academy of Economic Studies of Moldova (AESM). According to the Regulation of the Association "ASEM Seniors", all members of the Association "ASEM Seniors" are affiliated to the parent enterprise ASEM [1].

The Senior Association is an ecological community of seniors that ensures psychologically healthy old age through those, that the member of the Association (senior) is not affected by the "psychological blow" neither at the transition from employee to associate nor at the transition from associate to affiliate. The senior in the Seniors Association is an affiliated member of the parent enterprise until deep old age.

The member of the Senior Association is not only a consumer of goods in society, but he also contributes "to the best of his ability" to the production of social goods at the parent enterprise. This is an essential property of the Association of Seniors, given that in the near future the number of pensioners will be equal to the number of young taxpayers.

The Senior Association is an intergenerational ecological community, which contributes to the

creation of the company's assets by working closely with the other part of the collaborators from the parent enterprise. The senior is the person with a lot of knowledge, with extensive experience and his collaboration with the younger generation produces results with added value.

Senior Associations are dedicated to solving the problems announced by the United Nations / WHO Programme "Decade for Healthy Ageing" (2021-2030). This Programme under Healthy Ageing is aligned with the calendar of the United Nations 2030 Agenda on Sustainable Development and the Sustainable Development Goals [2]: No poverty, No hunger, Health and well-being, Quality education, Equality, etc

The present research is an engagement in the problem-solving activities announced by the United Nations / WHO Programme "Decade for Healthy Aging" (2021-2030) through the contribution of Senior Associations to solving problems in the fields of: Senior Homes, Senior Home Life, Anti-loneliness, Silver Citizenship, Silver Technologies and Healthy Aging - the framework of the "International Summit of Silver Citizens" on September 16-17, 2024 in Paris [3]. The research represents the evolution of the possibilities of senior associations in the silver economy, as part of the evolution of the Society of Consciousness and as part of the UN/WHO programme "Decade for Healthy Ageing" (2021-2030).

The silver economy is a fantastic territory of innovation of the UN decade 2021-2030-Healthy Ageing: the diversity of actors in the sector, their dynamism, innovations, job creation potential and commitment to healthy ageing testify to the real economic opportunity of demographic transition.

Acknowledgements: Current research has been evaluated according to the guide and with the support of COST CA19136: NET4Age-Friendly, whose main and objective aim is to establish an international and interdisciplinary network of researchers from all sectors to promote awareness and support the creation and implementation of smart and healthy indoor and outdoor environments for present and future generations.

Keywords: Social sciences, senior association, healthy aging, psychology, senior, employee, associate, affiliate, intergenerality, sustainable development

JEL: B55, C53, C88,D23

References:

[1]Todoroi, D. (2023), Paic, M., Association "ASEM Seniors" – 3 Years of activity, ASEM Publishing House, 2023, 164 pages, ISBN 978-9975-147-95-8

[2] <https://www.who.int/initiatives/decade-of-healthy-ageing>

[3] <https://www.silvereco.org/festival/en/program/>

Asociații Seniorale în Deceniul ONU (2021-2030): Îmbătrânire Sănătoasă.

Dumitru TODOROI, Prof.univ., Dr. hab., Mem.cor. ARA, Asociația „Seniorii ASEM”, ASEM, Chișinău, Republica Moldova, todoroi@ase.md, **ORCID: 0000-0001-8823-6015**

Abstract.

Asociația Seniorală este o comunitate ecologică a seniorilor din jurul pensionării la întreprinderea-mamă. Asociația „Seniorii ASEM” este o comunitate a profesorilor **angajați** (seniorii din perioada ultimilor 5 ani de activitate de până la pensionare), **asociați** (seniorii pensionari cu activitate redusă) și **afiliați** (seniorii pensionari voluntari) ai Academiei de Studii Economice a Moldovei (ASEM). Conform Regulamentului Asociației „Seniorii ASEM” toți membrii Asociației „Seniorii ASEM” sunt afiliați la întreprinderea-mamă ASEM [1].

Asociația Seniorală este o comunitate ecologică a seniorilor care asigură **bătrânețe sănătoase psihologic** prin aceea, că membrul Asociației (seniorul) nu este afectat de „lovitura psihologică” nici la trecerea de la angajat la asociat și nici la trecerea de la asociat la afiliat. Seniorul din Asociația Seniorală este **membru afiliat la întreprinderea-mamă până la adinci bătrânețe**.

Membrul Asociației Seniorale este nu numai consumator de bunuri în societate, dar el contribuie „după puterile lui” și la **producerea bunurilor sociale** la întreprinderea-mamă. Aceasta este o proprietate esențială a Asociației Seniorilor, având în vedere, că în viitorul apropiat numărul pensionarilor **se va fi egală** cu numărul tinerilor contribuabili.

Asociația Seniorală este o comunitate ecologică **intergenerațională**, care contribuie la crearea bunurilor societății prin colaborarea strânsă cu cealaltă parte a colaboratorilor de la întreprinderea-mamă. Seniorul este persoana cu multă cunoștință, cu o experiență vastă și **conlucrarea lui cu generația tânără** produce rezultate cu **valoare adăugată**.

Asociațiilor Seniorale sunt dedicate soluționării problemelor anunțate de Programul Națiunilor Unite / OMS „Deceniul pentru îmbătrânirea sănătoasă” (2021-2030). Acest Program în cadrul îmbătrânirii sănătoase este aliniat la calendarul Agendei 2030 a Organizației Națiunilor Unite privind dezvoltarea durabilă și al **obiectivelor de dezvoltare durabilă**[2]: Fără sărăcie, Fără foame, Sănătate și bunăstare, Educație de calitate, Egalitatea, etc

Prezenta cercetare este o angajare în activitățile de soluționare a problemelor anunțate de Programul Națiunilor Unite / OMS „Deceniul pentru îmbătrânirea sănătoasă” (2021-2030) prin aportul Asociațiilor Seniorale la soluționarea problemelor din domeniile: Cămine seniorale, Viața acasă a seniorilor, Anti-singurătatea, Cetățenie de argint, Tehnologiile de Argint și Îmbătrânirea sănătoasă - cadrul „Summitului Internațional al Cetățenilor de Argint” din 16-17 septembrie 2024 din Paris [3].

Cercetarea reprezintă evoluția posibilităților **asociațiilor seniorale în economia de argint**, ca parte a **evoluției Societății Conștiinței** și ca parte a **programului ONU / OMS "Deceniul pentru îmbătrânire sănătoasă" (2021-2030)**.

Economia de argint este un teritoriu fantastic de inovații a **deceniului ONU 2021-2030- Îmbătrânire sănătoasă**: diversitatea actorilor din sector, dinamismul acestora, inovațiile, potențialul de creare de locuri de muncă și angajamentul față de îmbătrânirea sănătoasă mărturisesc oportunitatea economică reală a tranziției demografice.

Recunoaștere: Cercetarea actuală a fost evaluată în conformitate cu ghidul și cu sprijinul COST CA19136: NET4Age-Friendly, al cărui scop principal și obiectiv este de a stabili o rețea

internațională și interdisciplinară de cercetători din toate sectoarele pentru a promova conștientizarea și pentru a sprijini crearea și implementarea unor medii interioare și exterioare inteligente și sănătoase pentru generațiile prezente și viitoare.

Cuvinte cheie: Științe sociale, asociație seniorală, îmbătrânire sănătoasă, psihologie, senior, angajat, asociat, afiliat, intergenerationalitate, dezvoltare durabilă

JEL: B55, C53, C88, D23

Referințe:

[1] Todoroi, D. (2023), Paic, M., Asociația „Seniorii ASEM” – 3 Ani de activitate, Editura ASEM, 2023, 164 pagini, ISBN 978-9975-147-95-8

[2] <https://www.who.int/initiatives/decade-of-healthy-ageing>

[3] <https://www.silvereco.org/festival/en/program/>

15:15 - 15:30

Strategies and Concepts for the Elaboration and Selection of the Technical Means of Integrated Informatics Systems

Tudor Stefan Leahu, Ph.D., Ass.Prof.,
Free International University of Moldova

Abstract The work presented is dedicated to the problems of establishing and operating a decisive basic compartment - the technical means - of perspective integrated informatics systems (It.Ic.S.), interpreted and considered as a material - informational nucleus of an operational order, in the end - with a regime of real activity in time. The evolution trend of the unitary - integrated informatics system and the achievement of its final goal is elucidated in relation to the material-informational economic field.

The fundamental difference of the It.Ic.S., compared to the existing systems of this category, consists in the total coverage of the operation of the unitary informational process of the material organizational unit (enterprise, bank, university, etc.) with informatics means and technologies. Such an approach requires the development and operation of the material (production, distribution (marketing), consumption) - informational (organization, structuring, processing, use) system from a unitary-integrated position. Therefore, regardless of spatial and temporal scales, by various means and methods, the system must have any direct links of informational processes with material ones and realize any interaction between them.

And in the current informatics environment, which is predominantly characterized by territorial isolation and discrete functioning over time, the guidance of the formulated concept will contribute to a much more prepared level for the design and implementation of technical-

organizational units and superior performance technologies, compared to those applied in present day.

The creation of the systems in question will also increase the intellectual level of managers of any qualification, urging theirs to be more concerned with the formulation, testing and implementation proving of decisional and non-informative informational values, which already and overwhelmed them at the moment. That is why, at present, compared to the unitary-integrated ideology and the regime of real-time operation, such systems can be estimated as initial and only at the conceptual level. However, the created situation should not discourage, but, on the contrary, impose, above all, on the researchers to translate in life and carry out the material-informational processes according to the directions of investigation, oriented towards activities not yet whoiede. Starting from what has been elucidated so far and the scientific principle of determining the composition and functional capabilities of informatics technical means based on the characteristics of the quantitative and qualitative parameters of the material-informational domain, the strategies and concepts of the elaboration and selection of these means are formulated and elucidated in the paper . Unlike the systems that are in operation and the general theses of themcreation and operation, in the paper it is proposed that any works of elaboration, implementation and operation examination should be started, carried out and implemented according to the decisive basic principle: from the domain of application towards means and methods that ensure the operation of the analyzed system, and not the other way around, which is typical for the current situation. According to this desideratum, first the stages of processing the values of informational predestination units and their own operations are highlighted, systematized and characterized. The sequence of them fulfillment is established. On this basis, the concepts of selecting technical resources are further classified and substantiated, the ways (technologies) of determining the composition and number of means necessary for the realization of the informative sub-compartment of the unified informational process are analyzed. In this sense, the scheme of the consecutiveness of the unitary process of compositional and quantitative determination of the technical compartment of the developed reflective destination systems is elaborated and recommended. In the same context, at the conceptual level, the methodology and the conceptual mathematical and graphic apparatus are for selecting the technical means of processing the values of informative data units are elaborated, resulting from the phases, stages and operations of them evolution in the real economic environment.

Keywords: Computer Science, integrated systems, unitary-integrated ideology, real-time operation

WEDNESDAY JUNE 5, 2024

SESSION 6

Session Chairs: Rodica Lupu

Location: Sala Senatului, Rectorat

10:00 – 12:00

Literary Session / Prezentare Literara

Elena Rodica Lupu

Florica Bud

Amza Gheorghe: Scormonind in lumina - Poezii

Florian Olteanu

Group Discussions: Acad. Dorin Prunariu