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**F. Várkonyi Egon, Drd.**  
Pharmaceutical Chemist, Teacher of Chemistry

## DATA ON EDUCATIONAL ATTAINMENT

2023-currently	<b>University of Szeged, Doctoral School of Chemistry, Szeged</b> <b>Ph.D. student (Drd.),</b> Program: Catalysis, surface, colloid and materials science. Design of complex drug delivery particles containing anticancer (coordination) compounds.	
2024.	<b>Hungarian Atomic Energy Authority</b> <b>Extended degree course in radiation protection,</b> completion of 2 specialisations: <ul style="list-style-type: none"><li>▪ <b>Health applications</b>, including education and research,</li><li>▪ Non-nuclear <b>industrial applications</b>, including education and research,</li></ul> Pedigree number: BL_B_202406_11 The OTH/OAH licence number authorising the training:SRV-HA19399 <i>Valid for 5 years</i>	
2022-2023.	<b>University of Szeged, Faculty of Science and Informatics, Szeged</b> <b>Teaching Chemistry M.Ed.</b> (Master's Degree – Master of Education), Qualified as a Teacher of Chemistry. <i>Grade of degree: excellent</i> [P81D001500]	
2021-2023.	<b>University of Szeged, Faculty of Science and Informatics, Szeged</b> <b>Chemistry M.Sc.</b> (Master's Degree – Master of Science), Qualified as a Chemist. Pharmaceutical Chemistry specialisation. <i>Grade of degree: good</i> [P81D001401]	
2018-2021.	<b>University of Szeged, Faculty of Science and Informatics, Szeged</b> <b>Chemistry B.Sc.</b> (Bachelor's Degree – Bachelor of Science), Qualified as a Chemist. <i>Grade of degree: good</i> [P81B067138]	
2017-2018.	<b>University of Szeged, Faculty of Science and Informatics, Szeged</b> Biology-chemistry teacher student – change.	
2009-2017.	<b>Our Lady Catholic School, Kalocsa</b> Primary and Secondary Grammar School studies. Graduation [P44P058076]; Matriculation at advanced level (biology and chemistry).	

2005-2009.

**Dusnok-Fajsz Associated General Education Centre, Dusnok**  
Primary School studies.

## EXPERIENCE IN EDUCATION (as a teacher)

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University  
education

### **University of Szeged - 2024/25 academic year Semester I**

- Chemical calculations for biology (B.Sc.) students (*in progress*)
- Quantitative chemical analysis exercise for pharmacy students, counting exercise and laboratory (*in progress*)

### **University of Szeged - 2023/24 academic year Semester II**

- Laboratory course in biological analytical chemistry for B.Sc. students in molecular bionics engineering.

*Student rating (on a scale of 1 to 5): excellent 4.87*

### **University of Szeged - 2023/24 academic year Semester I**

- Teaching general chemistry computational practice and laboratory practice to pharmacy students

*Student rating (on a scale of 1 to 5): excellent (4.74)*

- General chemistry calculations consultation classes for B.Sc. students in Biology.



High school

### **2024 spring graduation.**

Advanced level chemistry oral examinations - as a member of the subject committee, I was a questioning teacher in two counties.

- Csongrád-Csanád county (*Szegedi Tudományegyetem Gyakorló Gimnázium és Általános Iskola*)
- Bács-Kiskun county (*Kecskeméti Református Gimnázium*)

### **University of Szeged Practical High School and Primary School (former Ságvári), 2022/23 academic year Semester II**

Teaching practice (group + individual), 9-10. classes

*Exercise rating: excellent*



Further training, lectures

2024. march

### **Pázmány Péter Catholic University, Budapest**

#### **In-service training for secondary school chemistry teachers**

*Attended and completed training.*

Certificate serial number: T/2024/083775-1



2024. january

### **Bács-Kiskun county local DTV, Dusnok**

Making a presentation in the context of a report.

Theme: research, children in public education, covid-information age.






2023. october

### **XV Carpathian Basin Chemistry Camp, Zenta – Serbia**

Participation as a lecturer,

Lecture entitled: "From Human to Real, or the recipe for genius?!"



2023. april	<b>MCC Szeged Training Centre, Teachers' Conference participation</b> Presentation by Gergő Fegyverneki (secondary school teacher, university lecturer, digital pedagogy expert, methodological consultant) on "How to communicate with the digital generation".	
2023. march	<b>MCC Szeged Training Centre, lecture participation</b> Lecture by Dr. Annamária Tari, psychoanalyst, psychotherapist on "The power of online space and family life... in the 21st century".	
2023. march	<b>Mentor(h)áló Pedagogy in a different way series, Szeged</b> Lecture by Dr. Miklós Lehmann, Associate Professor, Department of Social Sciences, ELTE, entitled "How to raise our children to be "savvy" media consumers.	
2022. november	<b>Mentor(h)áló Pedagogical Evenings programme, Szeged</b> Presentation by Gergő Fegyverneki, digital pedagogy expert, on internet and gadget addiction (children at the centre).	

## CHEMISTRY/RESEARCH EXPERIENCE.

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2023-currently	<b>Hungarian Academy of Sciences – University of Szeged, "Momentum" Functional Metal Complexes Research Group</b> Status: assistant research fellow (part-time job next to the Ph.D. studies) Activity: research experience in coordination chemistry.	
2022-2023.	<b>Hungarian Academy of Sciences – University of Szeged, "Momentum" Noble Metal Nanostructures Research Group</b> Activity: Interaction of noble metal nanoclusters with serum protein in 2D and 3D systems; research, preparative experience. <i>Thesis leader: Juhászné Dr. Csapó Edit</i>	 
2022. summer-autumn	<b>Under the leadership of the Ministry of Innovation and Technology National Laboratory of Biotechnology, Biological Research Centre, Szeged – Centre of Excellence of the European Union, Institute of Biochemistry, Membrane and Stress Biology Unit</b> Activity: Optimizing the composition of lipid nanoparticles for tissue specific targeting of mRNA. (Contract of assignment)	 
2022. summer	<b>CLNE Laboratory Kft., Szeged</b> Activity: Product development for water analysis measurements, internship. Products: pH calibration solutions, calibration solutions for conductivity measurements, reagents for photometers.	
2022. june	<b>Hungarian Academy of Sciences – University of Szeged, "Momentum" Noble Metal Nanostructures Research Group</b> Research activities (Contract of assignment). Research, preparative experience.	 

2022. spring **University of Szeged, Department of Inorganic and Analytical Chemistry and Department of Plant Biology**  
 Activity: Study of trace element and nanoparticle uptake of plants by LIBS elemental mapping. During a project work.  
*Thesis leader: Prof. Dr. Galbács Gábor and Ördögné Dr. Kolbert Zsuzsanna*
- 2019-2021. **University of Szeged, Department of Physical Chemistry and Materials Science – Colloids and Nanostructured Materials Research Group**  
 Activity: Design of liposomal carrier particles containing vitamin B<sub>1</sub>; research, preparative experience. This work has resulted in a scientific article.  
*Thesis leader: Juhászné Dr. Csapó Edit and Janóné Dr. Ungor Ditta*
2019. july **Hungarian Academy of Sciences – University of Szeged, "Momentum" Biocolloids Research Group**  
 Activity: Helping in a Ph.D. work on Nanozymes; preparative experience.  
*Thesis leader: Prof. Dr. Szilágyi István and Nizar B. Alsharif*
- Training courses
2023. october **"Budapest School on Modern X-ray Science"**  
 Natural Science Research Centre hosted the Budapest School on Modern X-ray Science (3-6 Oct 2023) - with the support of the European XFEL, the European Synchrotron Radiation Facility (ESRF) and the Natural Sciences Research Centre - organised by the Hungarian Synchrotron Committee and the Eötvös Loránd Physics Society  
*Certificate rating obtained: good (4).*



## SCIENTIFIC RESULTS

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### Scientific articles

25.11.2023.: MDPI – International Journal of Molecular Sciences

Title: Thermodynamic Characterization of the Interaction of Biofunctionalized Gold Nanoclusters with Serum Albumin Using Two- and Three-Dimensional Methods

Available: <https://doi.org/10.3390/ijms242316760>

Author contribution: investigation.



12.09.2021.: MDPI – International Journal of Molecular Sciences

Title: The pH-Dependent Controlled Release of Encapsulated Vitamin B<sub>1</sub> from Liposomal Nanocarrier

Available: <https://doi.org/10.3390/ijms22189851>

Author contribution: methodology, investigation.



## Scientific presentation(s).

2024. (29th of may): Hungarian Chemists' Association, Complex Chemistry Section, 57th Complex Chemistry Colloquium

Presentation title: development of semi-sandwich complexes with multidrug resistance selectivity using phenanthroline derivatives.

2022. autumn -2023. spring: 36. National scientific student conference 2023., University of Szeged, Faculty of Science and Informatics – local and national participation

Section: Chemistry student group - Organic chemistry / Biochemistry

Result: 2nd place

Thesis: Design of colloidal drug delivery systems for vitamin B<sub>1</sub> encapsulation and tissue-specific targeting of mRNA.

Témavezetők: *Juhászné Dr. Csapó Edit (MTA-SZTE), Janóné Dr. Ungor Ditta Anita (MTA-SZTE), Dr. Gombos Imre (BNL-SZBK).*



## OTHER INFORMATION

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### Computer skills

Knowledge of Microsoft Office at user level  
(e.g. dokumentation, processing measurement data).

### Language examination

English Vantage (B2) complex (state accredited)


Oral: ELTE Origó [NG010-05124]

Written: iTOLC [QD320-01445].

### Driving licence

Category B.

Szeged, 06.09.2024.

  
Egon F. Várkonyi, Drd.