

Josip Slisko

## Un resumen curricular

Josip Slisko es, desde el año 1991, el profesor – investigador en la Facultad de Ciencias Físico Matemáticas de la Benemérita Universidad Autónoma de Puebla. La licenciatura en física ha terminado en el año 1971 en la Universidad de Sarajevo (Bosnia y Herzegovina). La maestría en la filosofía de la ciencia ha terminado en el año 1978 en la Universidad de Zagreb (Croacia). En el año 1989 ha obtenido el grado de doctor en ciencias filosóficas en la Universidad «Kiril y Metodiye» en Skopje (Macedonia).

Josip Slisko investiga el aprendizaje y la enseñanza de la física y las matemáticas. Desde el año 1994 es el miembro del Sistema Nacional de Investigadores. Actualmente está en el nivel 2 (nombramiento del 2017 – 2021).

Imparte los cursos de licenciatura «Enseñanza de la física» y «Desarrollo de habilidades del pensamiento complejo». En la Maestría en Educación Matemática dicta el curso bimestral «Metodología de la investigación». Como director o co-director ha dirigido más que 30 tesis de licenciatura, maestría y doctorado.

Josip Slisko ha publicado en México varios libros de texto de física para la secundaria y bachillerato. Como autor o coautor aparece en 40 capítulos de libros y en 140 artículos en revistas educativas, tanto nacionales como internacionales. Sus 75 publicaciones se han citados 410 veces por otros autores.

En la revista «Latin American Journal of Physics Education», Josip Slisko es el Editor Asistente y en la revista «European Journal of Physics Education» es el Editor Regional para las Américas.

Es el Arbitro en 10 revistas con el factor de impacto.

En el año 2011, fue reconocido con La Medalla LAPEN (Latin American Physics Education Network) por las contribuciones al desarrollo, al refuerzo y al enriquecimiento de la educación en física en América Latina.

Desde el año 1993, Josip Slisko es el Presidente del Comité organizador de la Taller internacional «Nuevas tendencias en la enseñanza de la física». Hasta ahora se han llevado a cabo 24 talleres en que han participado, como ponentes invitados, muchos de los más destacados expertos de la física educativa.

En el año 2014, Josip Slisko, Lidia Aurora Hernández Rebollar y José Antonio Juárez López han iniciado el taller internacional «Tendencias en la educación matemática basada en la investigación». El taller se lleva a cabo cada año en el mes de noviembre.

Ambos talleres tienen como su objetivo principal que los maestros de física y matemáticas conozcan los resultados de investigación educativa que pueden mejorar el aprendizaje de los alumnos y los estudiantes.

## Dewey I. Dykstra CV

Dewey Dykstra began his study of physics in the Fall of 1963. After completing secondary school in Frederick, MD, he earned his B.S., Physics, at Case Institute of Technology in 1969 in Cleveland, OH. He then taught high school physics at East Technical High School for three years in Cleveland, OH. Following that he taught physics and physical science for one year at Middletown Junior-Senior High School in Middletown, MD. He attended the graduate program in Physics at The University of Texas-Austin from 1973 to 1978, earning his Ph.D. in Physics with a thesis titled: Solid-Solid Phase Transitions in  $K_2SnCl_6$  Using Scanning Calorimetry.

He was an Assistant Professor of Physics at Oklahoma State University in Stillwater, OK for three years and moved through the Professorial ranks at Boise State University in Boise, ID during the next 32 years. During his time at the university level, he ran workshops and taught courses for teacher training programs, in addition to teaching physics for all three levels of introductory physics and other courses at higher levels in physics.

Dr. Dykstra has been a member of the American Association of Physics Teachers (AAPT) most of the time between 1967 until the present. During that time, he has presented numerous Invited contributed papers and workshops at national meetings, organized sessions at both national and local (Section) meetings, participated in many national committees as member and as Chair, represented his Sections (ID-UT and AOK) at national meetings, assisted the national office in establishing a new Section, and served on the national Executive Board of AAPT. He earned the Distinguished Service Citation and is a Fellow of AAPT. During this time, he also participated in the development of a new field in physics, Physics Education Research (PER).

## J. LORENZO DÍAZ CRUZ

J. Lorenzo Díaz Cruz es originario del estado de Guerrero, donde realizó sus estudios desde primaria hasta el bachillerato. Es Ingeniero Físico por la Universidad Autónoma Metropolitana (UAM-A), Maestro en Ciencias por el CINVESTAV-IPN y doctor por la Universidad de Michigan (USA). Realizó un postdoctorado en la Universidad Autónoma de Barcelona. Es Profesor-Investigador titular C en la FCFM-BUAP (Puebla).

Ha dirigido 14 tesis de doctorado, 18 de maestría y 5 de licenciatura. En la actualidad es nivel 3 del SNI, y ha formado parte de la Comisión Evaluadora del mismo.

Su producción incluye 150 artículos, de ellos 98 artículos han sido publicados en revistas indexadas de alto impacto, que han producido del orden de 4100 citas totales. Sus trabajos sobre el Bosón de Higgs y materia oscura han motivado búsquedas experimentales en los aceleradores LHC del CERN y Tevatron del FNAL (USA). Ha sido investigador visitante en: U of California (Berkeley), ICTP (Italia), CERN, Fermilab, NCTS (Taiwan), Niels Bohr Institute (Dinamarca), entre otras.

Se le otorgó Mención Honorífica del Premio Nacional de la Juventud (1985), Premio Estatal Puebla de Ciencia y Tecnología (2009), en el área de Ciencias Exactas y Naturales. Fue presidente de la División de Partículas y Campos de la SMF en 2001-2002. Es miembro de la Academia Mexicana de Ciencias.

Participó en el seminario de alto nivel CIDE-Yale (2016), iniciativa multidisciplinaria para discutir los problemas de México. A partir de la misma ha retomado su interés en los problemas de la enseñanza de las ciencias como parte de la educación en México.

Ha participado en diversos talleres de creación literaria de Puebla; cuenta con una novela ("El muchacho que soñaba con el bosón de Higgs"). Ha publicado algunos cuentos en medios locales y una obra de teatro con fines didácticos ("El rap de la materia oscura").

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## Short CV of David R. Sokoloff

David Sokoloff is Professor of Physics, Emeritus at the University of Oregon. He earned his B.A. in Physics at Queens College of the City University of New York and his Ph.D. in AMO Physics at the Massachusetts Institute of Technology. For over three decades, he has studied students' conceptual understandings, and developed active learning approaches (with NSF and FIPSE support). These include *Interactive Lecture Demonstrations (ILDs)* and the four modules of *RealTime Physics: Active Learning Laboratories (RTP)*, both published by Wiley and co-authored by Priscilla Laws and Ronald Thornton. His work has been published in the American Journal of Physics, the European Journal of Physics and The Physics Teacher.

He has conducted numerous international and national workshops to disseminate these active learning approaches to secondary and university faculty. Since 2004, he has been part of the UNESCO Active Learning in Optics and Photonics (ALOP) team, presenting workshops to date in 37 developing countries in Africa, Asia, Eurasia, and Latin America. He is contributor to and editor of the *ALOP Training Manual*. The ALOP Team was awarded the 2011 SPIE Educator Award.

He was awarded the American Physical Society (APS) 2010 Excellence in Physics Education Award (with Priscilla Laws and Ronald Thornton), the 2011 Latin American Physics Education Network (LAPEN) Medal, the American Association of Physics Teachers (AAPT) 2007 Robert A. Millikan Medal and 2020 Hans Christian Oersted Medal and the 2020 GIREP Medal. He has been a Fulbright Specialist in Argentina (2011) and Japan (2018), is currently a member of IUPAP Commission 14 (International Commission on Physics Education). He served as AAPT President in 2011 (in the Presidential Chain 2009-2012).

**PROFILE**  
**OLGA LUCÍA CASTIBLANCO ABRIL**



Ph.D. in Science Education from the State University of São Paulo (Brazil -2013). Magister in Physics Teaching from the National Pedagogical University (Bogotá-2003). Degree in Physics Teaching from the District University Francisco José de Caldas (Bogotá-1996).

Since 2008 she has been a professor and researcher at the District University Francisco José de Caldas, working mainly in the Teaching of Didactics of Physics. Also, she worked for 10 years as a physics and mathematics teacher for the District Secretary of Education, in public schools in Bogotá.

She has already completed 25 years of experience in teaching, working at various levels and educational contexts (Basic education, High School, Undergraduate, and Graduate). Founder and Editor chief of the Journal “Góndola, Enseñanza y Aprendizaje de las Ciencias (Teaching and Learning Sciences)” from where contributes to the construction researchers networks in this area. (<https://revistas.udistrital.edu.co/index.php/GDLA>)

Leader of the research group "Teaching and Learning Physics" contributing to the construction of knowledge through the orientation of degree works in the Master of Education and Training Physics Teacher program, as well as doctoral internship and development of research projects.  
<https://comunidad.udistrital.edu.co/geaf/index-2/>

In addition to Spanish, she is fluent in Portuguese and English and has knowledge of the French language.

Women of Success Award, Education Category, Colombia, 2020. Good Pedagogical Practices Award, Ministry of Education, Colombia, 2021. In the last five years, she has been invited as a speaker at 25 national and international academic events. She has a diverse bibliographical production on science teaching and teacher training, through books, articles, videos, and presentations at national and international academic events, which can be consulted at the following links.

**CVlac MinCiencias**

[http://scienti.colciencias.gov.co:8081/cvlac/visualizador/generarCurriculoCv.do?cod\\_rh=00002804](http://scienti.colciencias.gov.co:8081/cvlac/visualizador/generarCurriculoCv.do?cod_rh=00002804)

**Google Academics Profile**

<https://scholar.google.com/citations?user=mpNuKgMAAAAJ&hl=es>

**ORCID**

<https://orcid.org/0000-0002-8069-0704>

**Research Gate**

[https://www.researchgate.net/profile/Olga\\_Castiblanco\\_Abril/publications](https://www.researchgate.net/profile/Olga_Castiblanco_Abril/publications)

**Youtube**

**Conversaciones académicas con la Prof. Olga Castiblanco**

<https://www.youtube.com/watch?v=kUml6mM8XJQ&t=197s>

**Explorando la experimentación en didáctica de las ciencias naturales**

<https://www.youtube.com/watch?v=VZVmTYpz8OQ&feature=youtu.be>

**Tipologías de experimentación en la enseñanza de la física**

<https://www.youtube.com/watch?v=UYkAC3VeqV0>

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### **José Orozco Martínez**

Desde el 2001 imparte cátedra A nivel medio superior en el Centro de Estudios Científicos y Tecnológicos #11 “Wilfrido Massieu” (CECYT-WM); en la “Universidad Abierta y a Distancia de México” (UNADM) fue profesor en línea a nivel licenciatura del año 2011 al 2012. Desde el 2012 trabaja en el Colegio de Ciencias y Humanidades plantel Naucalpan de la UNAM impartiendo cátedra a nivel medio superior en las asignaturas de física. Experto en física educativa y de ambientes virtuales, funge como diseñador instruccional y coautor de las unidades de aprendizaje de Física para el Politécnico Virtual en el 2010.

Sus líneas de investigación se han centrado en el aprendizaje activo de la física utilizando los dispositivos móviles tanto para las clases presenciales como para los ambientes virtuales; a utilizado el Blended Learning o aprendizaje híbrido. Miembro de la Asociación Americana de Profesores de Física sección México y cuenta con dos publicaciones en la revista Mexicana de Bachillerato a Distancia.

Investiga es el uso de la teoría de comunicación llamada semiótica, en el diseño de secuencias didácticas para el proceso de enseñanza aprendizaje de cinemática.

Desde enero del 2021 se encuentra colaborando con el proyecto PhET de la Universidad de Colorado Boulder como diseñador de actividades de aprendizaje para Física y, en 2022 fue elegido como PhET Fellow junto a 15 Fellows en África y 17 Fellows en América Latina los cuales son educadores ejemplares comprometidos a aumentar la accesibilidad y el impacto de las simulaciones de PhET.

### **Rubén Perea Leyva**

Ingeniero mecánico eléctrico y maestría en comunicación y educación, es profesor de física en el colegio de bachilleres del estado de Veracruz en el puerto de Veracruz. Desde 1995 ha sido docente de física y matemáticas en Colegio de Estudios Científicos y Tecnológicos del Estado de Veracruz, Colegio Cristóbal Colón, Universidad Cristóbal Colón, Instituto Tecnológico de Monterrey en cursos de verano campus Veracruz y el Instituto Tecnológico Superior de Alvarado campus Medellín de Bravo.

Su trabajo en clase se basa en la experimentación y creación de prototipos didácticos, experimentales y de aplicación tecnológica. Ha asesorado a alumnos ganadores de premios en el concurso nacional de aparatos y experimentos de física convocado por la sociedad mexicana de física; con premios en 2010, 2014, 2019 y 2021.

Ponente en el XXVIII encuentro nacional sobre la enseñanza de la física en el año 2017 y en la reunión anual de la AAPT-MX en 2019.

Autor y coautor del libro de Física 2 y Física 1 del COBAEV, empleados en el subsistema del mismo nombre desde 2018.

Revisor técnico del libro Física 2 del autor Dr. Rodrigo Gamboa Goñi de la editorial Umbral (ISBN: 978-607-619-599-4)

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## Martina Kekule

Ph. D.

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Department of Physics Education

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My current research is aimed at investigation of students' attention by the eye tracking method and I head the eye tracking research group at Department of Physics Education at Charles University based in Prague (<https://kdf.mff.cuni.cz/eyetracking/index.php>). In past, I was a member of the SMIR Committee TIMSS 2011 at International Association for the Evaluation of Educational Achievement and participated in various national and European projects focused on students' attitudes towards science and implementation IBSE method into science education. Moreover, I am interested in interdisciplinary links between science and art in education; for example, in 3D photos and pictures.

### Employment History

2006 – current **Charles University, Faculty of Mathematics and Physics, Department of Physics Education**

2010 – 2014 European **project ESTABLISH** - European Science and Technology in Action Building Links with Industry, Schools and Home (č. 244749).

2013 – 2018 **Charles University, Faculty of Education, Institute for Research and Development in Education**, project CloSE (Czech Longitudinal Study in Education); developing research tools for mathematics.

2010 – 2012 **National Institution of Technical and Vocational Education (NUOV), Prague**, project MEYS AUTOEVALUTION (CZ.1.07/4.1.00/06.0014); author of the „Framework for school self-assessment“ tool.

2008 – 2012 **International Association for the Evaluation of Educational Achievement**, member of Science and Mathematics Item Review Committee TIMSS 2011.

### Presentations abroad

National Science Learning Centre, York, UK, 17. – 18. 9. 2007, The National Value Of Science Education.

3rd EPS Forum Physics and Society, Ratnieki, Latvia 15.-16. 4. 2009.

University of Jyvaskyla, Finland, 1.-27. 4. 2016, The Eye Tracking Method Workshop.

University of Jyvaskyla, Finland, 4.- 7.3. 2017, The Eye Tracking Research Seminar.

University of Jyvaskyla, Finland, 12.-16.2. 2018, Erasmus+.

Technische Universität Kaiserslautern, Germany, 2018, PER International Collaboration Meeting.

ESERA 2013, 2017, 2019

GIREP 2008, 2010, 2012, 2015, 2018

ICPE 2013, FISER 2014, ICCIE 2015, FMSERA 2016, 2018

**List of publications** [http://kdf.mff.cuni.cz/~kekule/publikace\\_tema.php](http://kdf.mff.cuni.cz/~kekule/publikace_tema.php)

**Education** Faculty of Mathematics and Physics, Charles University, Prague

Master's degree: 2004 in physics and mathematics education

Doctor's degree: 2009 in physics education research

### Other education

Humboldt-Universität zu Berlin, Germany, 20.08. – 07.09.2012, Mobile Eye Tracking Workshop.

CATA, Prague, 2011, 2011, Introductory Transactional Analysis 101 Course. Lector Giles Barrow, UK.

CATA, Prague, 20.-21.6.2014, Emotional rollercoaster - learning, change and development in organisations. Lector Sabine Klingenberg, TSTA-O, Germany.

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**Robert Zisk**  
robert.zisk@gse.rutgers.edu

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### Education

**Ph.D., Science Education** - Rutgers University Advisor: Eugenia Etkina October 2021

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### Faculty Appointments

**Assistant Teaching Professor, Science and Physics Education** September 2021 – Present  
*Graduate School of Education, Rutgers University*  
- Program Coordinator – Physics and Physical Science Education

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### Teaching Experience

**Lecturer** 2017 – 2021  
*Department of Physics and Astronomy, Rutgers University*

**Lecturer** 2011 – 2021  
*Graduate School of Education, Rutgers University*

**Teacher** 2009 – 2011  
Branchburg Central Middle School, Branchburg, NJ  
*Eighth Grade Science*

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### Publications

Bugge, D., Rutberg, J., Ahmed, S., **Zisk, R.**, & Jamula, D. (2022) Development of Hypothetico-Deductive Skills in an ISLE-Based Lab Taught by Novice Instructors. (Accepted for Publication)

Gitomer, D.H. & **Zisk, R.** (2015) Knowing what teachers know. *Review of Research In Education*, 39

Gitomer, D.H. & **Zisk, R.** (2015) Laboratories: learning and assessment. In Gunstone, R. (Ed.) *Encyclopedia of Science Education*

**Zisk, R.** & Etkina, E (2014) Exploring the use of elaborative interrogation in an introductory physics course. In Pullman, J., Kyza, E., O'Neill, D., Tabak, I., Penuel, W., Jurow, A., O'Connor, K., Lee, T., & D'Amico, L. (Eds.) *Proceedings of the 11<sup>th</sup> International Conference of the Learning Sciences*. (pp. 1501 - 1502) Boulder, Colorado.

### Invited Talks

**Zisk, R.** (2019, January) Developing and Preparing Physics Teachers in the United States. Invited talk presented at the American Association of Physics Teachers winter meeting, Houston, Texas.

**Zisk, R.** (2016, July) Learning through doing: Educating pre-service elementary and middle school teachers. Invited talk presented at the American Association of Physics Teachers summer meeting, Sacramento, California.

# CURRICULUM VITAE



**Name:** RNDr. Petr Kolář Ph.D.

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Department of Physics Education

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180 00, Praha 8  
Czechia

**Education** (Charles University, Faculty of Mathematics and Physics, Department of Physics Education)

- **Bachelor's degree:** Physics Directed Towards Education
- **Master's degree:** Training Teachers of Physics and Mathematics at Higher Secondary Schools
- **Doctor's degree:** Physics Education and General Problems of Physics

## Other Experience

- **teaching:** since 2015 a physics and mathematics teacher at an upper secondary school
- **ERASMUS+:** University of Jyväskylä, Faculty of Education and Psychology

## Scientific and teaching focus:

My main scientific focus is research on a physics curriculum for upper secondary schools. I and my colleague Vojtěch Žák have created a unique methodology for physics curriculum development. The methodology especially emphasizes the views of leading physicists, whereas other relevant stakeholders (other scientists, physics education experts and teachers) express their opinions on physicists' ideas. For more details, the part of our research dealing with leading physicists has been already published in the journal *Science Education* (in the open access mode) (DOI: <https://doi.org/10.1002/scs.21785>). On the basis of our results, the creation of a new physics textbook for upper secondary schools is in the process at the Department of Physics Education (Charles University, Faculty of Mathematics and Physics).

Within my physics teaching practice, I am mainly focused on the implementation of ICT into my lessons. I utilize ICT especially in two ways. First, I create analytical or numerical models of physically interesting situations and I use these models during lessons to display what we are discussing with students. Moreover, I usually teach my students some elementary numerical methods (Euler's, midpoint, Runge–Kutta) and how to use them to solve problems which are not solvable with high school mathematics. For analytical and basic numerical models, I use *GeoGebra* software, for more demanding numerical models, I use *Visual Python*.

The second way how I am trying to emphasize ICT during my lessons is the utilization of the *Arduino* platform. Working with Arduino is very easy and basic codes are not usually difficult to understand, which means students are able to create and program basic measuring devices with their own hands. For example, students are usually able to measure with no difficulties distance, temperature, voltage, intensity of light, background radiation, etc. They are also able to process obtained data and create graphs based on that data.