

IVANA KAWIKOVA, MD, PHD

*My career intertwines three components: I) **Medical Experience**, II) **Research Experience**; and III) **Experience in Education**. For clarity, development in these areas is outlined separately. Also, I had research career breaks from 2010-2015 and from 2018 to 2022.*

EDUCATION

I) Medicine

M.D.

- 1988 Pediatrics, Charles University, 2nd Medical School, Prague, Czech Republic
- 2014 Certification of M.D. degree by the Educational Commission for Foreign Medical Graduates in the U.S.A. (after passing Step 1, Step of the United States Medical Licensing Exam, USMLE)
- 2015 USMLE Step 3

II) Research

Ph.D.

- 1996 Pharmacology, University of Goteborg, School of Medicine
- 1995 Pharmacology, National Heart and Lung Institute, Imperial College
- 1998 Immunology, Yale University, School of Medicine

Postdoc

III) Education

- 2018 Certificate of College Teaching Preparation, Yale Center for Teaching and Learning

CAREER/ACADEMIC APPOINTMENTS (timeline; positions in Research(R), education (E), both (R&E)

- 1984-1988 (R&E) **Research and Teaching Assistant**, Department of Pathophysiology, Charles University, Prague, Czech Republic (Mentor: Jan Herget, M.D., Ph.D.)
- 1988-1991 (E) **Instructor**, Department of Pathophysiology, Medical School, Charles University, Prague, Czech Republic
- 1991-1996 (R) **Graduate Student**, Lung Pharmacology Group, Medicine, University of Goteborg, Gothenburg, Sweden (Mentor: Jan Lotvall, M.D., Ph.D.)
- 1993-1995 (R) **Visiting Research Fellow**, Department of Thoracic Medicine, National Heart and Lung Institute, Imperial College, London, UK (Mentors: Prof. Peter J. Barnes, FRS, Maria Belvisi, Ph.D.)
- 1996-1997 (E) **Instructor**, Department of Normal and Pathological Physiology, Charles University, Prague, Czech Republic (Chair: Jan Herget, M.D., Ph.D.)
- 1997-1998 (R) **Post-doc fellow**, Section of Allergy and Clinical Immunology, Medicine, Yale School of Medicine, New Haven, CT (Mentor: Philip W. Askenase, M.D.)
- 1999-2001 (R) **Associate Research Scientist**, Section of Allergy and Clinical Immunology, Medicine, Yale School of Medicine, New Haven, CT (Laboratory of Philip W. Askenase, M.D.)
- 2001-2009 (R) **Associate Research Scientist**, Department of Immunobiology, Yale School of Medicine, New Haven, CT (Laboratory of Alfred M. Bothwell, Ph.D.)
- 2012 – 2014 (E) **Instructor**, one-on-one tutor to undergraduate and graduate students in the field of nursing, physician assistant programs, health sciences, Online
- 2014 – ongoing (E) **Instructor**, one-on-one tutor to medical students and graduates during their preparation of the United State Medical Licensing Exams, Step 1-3, Online
- 2016-2018 (R) **Associate Research Scientist**, Section of Child Neurology, Pediatrics, Yale School of Medicine, New Haven, CT (Laboratory of Nigel S. Bamford, M.D.)
- 2018- 2020 (E) **Adjunct Professor**, University of Bridgeport, Bridgeport, CT (Chair. Kathleen Engelman, Ph.D.)
- 2018- 2023 (E) **Clinical Assistant Professor**, Frank H. Netter Medical School, Quinnipiac University, CT (Chair: Rebaca Zucconi, M.D.)
- 2020-2023 (E) **Adjunct Professor**, Pathobiology, University of Connecticut, Storrs, CT (Chair: Steven Geary, Ph.D., since 2022: Paulo Verardi, Ph.D.)
- 2019- ongoing (E) **Instructor**, Graduate Neuroscience Program, University of Hartford, CT (Program Director: Paula Sacchetti, Ph.D., Chair: Bin Zhu, Ph.D.)

- 2022-ongoing (R) **Visiting Research Scientist**, Department of Medicine, Yale School of Medicine (Laboratory of Li Wen, M.D., Ph.D.)
- March-June 2023 (R) **Visiting Senior Researcher** (Three-month International Mobility Scholarship), National Institute of Mental Health, Klecany, Czech Republic (Group leader: Filip Spaniel, M.D., Ph.D.)
- 8/2023-ongoing (R) **Adjunct Researcher**, National Institute of Mental Health, Klecany, Czech Republic

I) MEDICAL EXPERIENCE

HONORS AND RECOGNITION

- 1987 **Dean's Award for Medical Students with Outstanding Overall Performance** (1st in class of 120; the award was a stipend for a 4-week internship in the Department of Pediatrics, University Hospital in Wurzburg, Germany)

- 1983, 1984, 1985, 1986 **Scholarships for Medical Students with Exceptional Performance**

COURSES TAKEN AND U.S.A. MEDICAL EXPERIENCE

- 2000 **Clinical Immunology Observership**, Dana Clinic, Yale New Haven Hospital, half-a day/week for one year, Mentors: Drs. Fred Kantor and Philip Askenase
- 2015 **Obsessive-Compulsive Clinic Observership**, Yale Child Study Center, half-a-day per week for one year, Mentor: Drs. Robert King and James F. Leckman
2018. **MICU and PICU Observership**, Yale New Haven Hospital, 5x4 hours/week for 4 weeks, Mentors: Drs. Erica Herzog and Saquib Lakhani
- 2018 **Hands-on Externship**, Family Medicine Practice, 8-10hrs/day for 4 weeks, Mentor: Dr. Awais Malik
- 2021 **Physician Refresher Course**, Drexel University (6 weeks); Mentor: Dr. Niefular Varjavand
- 2021 **Medical knowledge self-assessment program** by the American College of Physicians (275 CME credits)
- 2021 **Board Certification Course in Internal Medicine** by the American College of Physicians (40.5 CME Credits)
- 2021 **Kaufman's Board Certification Course "Neurology and Psychiatry for Psychiatrists"** by Montefiore Medical Center, Albert Einstein College of Medicine (40.5 CME credits)
- 2021 **Course for "Allergy and Clinical Immunology Board Certification"**, by American Academy of Allergy, Asthma and Immunology (40.5 CME Credit)
- 2021 **Chronological Assessment of Suicide Events (CASE Approach)**, Training Institute of Suicide Assessment and Clinical Interviewing

TEACHING COURSES FOR MEDICAL STUDENTS

- 1988-1991 and 1996-1997 **Normal and pathological physiology seminars for 2nd and 3rd year medical students, Karlova University, Prague, Czech Republic**
- 2014-ongoing **Individualized one-on-one instructions for candidates of the USMLEs Step 1-3, online** (these activities include study plan development, frequent meetings over extended period of time to cover challenging topics and help students to integrate their knowledge; thus far, I logged >6,500 hours of one-on-one tutoring hours)
- 2018- ongoing **Problem based learning for 2nd year medical students**, Frank H. Netter Medical School, Quinnipiac University, Hamden, CT, USA

II) RESEARCH EXPERIENCE

HONORS AND RECOGNITION

University level

- 1983, 1985, 1986, 1987 **Medical school awards for Best Medical Student Researchers** (competition)
- 1986, 1987 **Yearly stipends for Student Research Assistants** (competition)

International/National/Regional

1991-1992 Swedish Heart and Lung Foundation Scholarship
1996 Glaxo-Wellcome Award for Young Investigators
2006, 2007 FOCIS Center of Excellence Travel Award

COURSES TAKEN TO ENHANCE INTERDISCIPLINARY RESEARCH

2019 **Magnetic Resonance Spectroscopy**, Magnetic Resonance Research Center, Yale School of Medicine (One semester long)

LAB MENTEES 8 mentees (medical students, postdocs, visiting research professor)

PROFESSIONAL SERVICE

Since 2008 Ad hoc grant reviewer for Autism Speaks Foundation
Since 2007 Ad hoc reviewer for Brain, Behavior and Immunity, European Journal of Neurology, Neurology Research, Frontiers in Immunology
Since 2022 Member of Editorial Board of Frontiers in Immunology (Inflammation)

GRANT HISTORY

A) Pending grants

Agency: Grant Agency of the Czech Republic

I.D. Collaborative research between the Czech Republic and Poland
Title: *"Deep analysis of exosomal regulatory system in patients with first episode of psychosis"*
P.I. Ivana Kawikova, M.D., Ph.D.; Percent effort: 50%; Direct cost per year: \$80,000/year
Total cost for project period: \$300,000; Project period: 1/1/2024-12/31/2026

Agency: Grant Agency of the Czech Republic

I.D. Research Grant
Title: *mTOR inhibitors in therapy of Leigh syndrome*
P.I. Tomas Rousar, Ph. D.; Role: Co-PI; Percent effort: 10%; Direct cost per year: \$80,000/year;
Total cost for project period: \$300,000; Project period: 1/1/2024-12/31/2026

Agency: Agency for Health Research, Czech Republic

I.D. Research grant
Title: *Proteomic analysis of exosomes in schizophrenia*
P.I. Ivana Kawikova, M.D., Ph.D.; Percent effort: 30%; Direct cost per year: \$166,000/year; Total cost for project period: \$625,000; Project period: 1/1/2024-12/31/2026

Agency: Ministry of Education, Youth and Sports, Czech Republic

I.D. "Inter-excellence" grant for collaboration between the Czech Republic and USA
Title: *The role of microbiota in schizophrenia*
P.I. Ivana Kawikova, M.D., Ph.D.; Percent effort: 20%; Direct cost per year: \$191,000/year
Total cost for project period: \$716,000; Project period: 3/1/2024-2/28/2027

B) Completed grants

Agency: Tourette Syndrome Association

I.D. Research Grant
Title: *The role of the immune system in Tourette's Syndrome*
P.I.: Ivana Kawikova, M.D., Ph.D.; Percent effort: 20%; Direct cost per year: \$67,500; Total cost for project period: \$75,000/year; Project Period: 7/1/2008-6/30/2009

Agency: Autism Speaks/National Association of Autism Research

I.D.# Pilot Grant 1474
Title: *Is autoimmunity involved in pathogenesis of autism?*
P.I.: Ivana Kawikova, M.D., Ph.D.
Percent effort: 0% (no salary allowed for a PI by the agency) Direct cost per year: \$54,000
Total cost for project period: \$120,000; Project Period: 12/1/2006-30/11/2008

Agency: Takeda Pharmaceuticals

I.D.: Research Grant - ISR-Preclinical agreement - #07-045A

Title: The effect of PPAR α ligand pioglitazone on graft arteriosclerosis of human artery in humanized mice.

P.I.: Alfred Bothwell, Ph.D.; Role on project: Co-PI; Percent effort: 35%; Direct cost per year: \$193,594; Total cost for project period: \$314,590; Project Period: 04/01/2008 - 09/19/2009

Agency: NIH/ NHLBI

I.D.: R01 HL088258

Title: PPAR-Mediated Inhibition of Vascular Remodeling

P.I.: Alfred Bothwell, Ph.D.; Role on project: Investigator; Percent effort: 15%

Direct cost: \$300,000/year ;Total cost for project period: \$1,655,000; Project Period: 4/01/2008-3/31/2012

Agency: NIH/NHLBI

I.D.: P01 PO1 HL070295

Title of P01: Chronic DTH and IFN-gamma in Human Graft Arteriosclerosis in mice.

Title of Project 3: IFN-gamma, smooth muscle cells and graft arteriosclerosis

P.I. of P01.: Jordan S. Pober, M.D., Ph.D. P.I. of Project 3: George Tellides, M.D., Ph.D., Alfred Bothwell, Ph.D.; Role on project: Investigator; Percent effort: 50%; Direct cost per year: \$1,514,812 (PO1)/\$320,874 (for project 3); Total cost for project period: \$12,535,069 (Total PO1)/\$2,572,352(Project 3); Project Period: 09/01/06 – 08/31/11

Agency: Tourette Syndrome Association: Research Award

I.D.: Research grant

Title: Does the immune system play a role in pathogenesis of Tourette's Syndrome?

P.I.: Ivana Kawikova, M.D., Ph.D.; Direct cost per year: \$67,500; Total cost for project period: \$75,000; Project Period: 7/1/2007-6/30/2008

Agency: NIH/NIMH

I.D.: _MH61940

Title: Prospective Longitudinal Study of PANDAS

P.I.: James F. Leckman, M.D., Ph.D.

Role for the project: Investigator (9/2003-9/2004); Percent effort: 35%; Direct cost per year: \$996,427; Total cost for project period: \$8,220,523.00;Project Period: 09/2001-08/2006

Agency: Yale School of Medicine Dean's Pilot Grant for Interdisciplinary Research

I.D.: Research grant

Title: Are symptom exacerbations in Tourette syndrome and/or Obsessive-Compulsive Disorder due to autoimmune CNS inflammation?

P.I.: James F. Leckman, M.D., Ph.D.; Role on project: Acting P.I.; Percent effort: 65%; Direct cost per year: \$62,500; Total cost for project period: \$125,000\$; Project Period: 10/1/2004-30/9/2006

Agency: Pfizer

I.D.: Research grant

Title: Does PPAR in human regulatory & effector T cells affect endothelial injury?

P.I.: Ivana Kawikova, M.D., Ph.D.; Percent effort: 65%; Direct cost per year: \$45,000
Total cost for project period: \$50,000; Project Period: 8/1/2003-7/30/2004

PEER REVIEWED RESEARCH PUBLICATIONS (selected out of total 39)

Scientific metrics: H Index 21, cited 1,354 times

Kawikova I (corresponding author), Leckman JF, Kronig H, Katsoyich L, Bessen DE, Ghebremichael M, Bothwell AL. *Decreased numbers of regulatory T cells suggest impaired immune tolerance in children with Tourette syndrome: preliminary study.* Biol Psychiatry. 2007 Feb 1;61(3):273-8.

Kawikova I (corresponding author), Grady BP, Tobiasova Z, Zhang Y, Vojdani A, Katsoyich L, Richmand BJ, Park TW, Bothwell AL, Leckman JF. *Children with Tourette's syndrome may suffer immunoglobulin A dysgammaglobulinemia A: preliminary report.* Biol Psychiatry. 2010 Apr 1;67(7):679-83.

Morer A, Chae W, Henegariu O, Bothwell AL, Leckman JF, **Kawikova I (corresponding author).** *Elevated expression of MCP-1, IL-2 and PTPT-N in basal ganglia of Tourette syndrome cases.* Brain Behav

- Immun. 2010 Oct;24(7):1069-73.
- Bos-Veneman NG, Olieman R, Tobiasova Z, Hoekstra PJ, Katsovich L, Bothwell AL, Leckman JF, **Kawikova I (corresponding author)**. *Altered immunoglobulin profiles in children with Tourette syndrome*. Brain Behav Immun. 2011 Mar;25(3):532-8.
- Tobiasova Z, Zhang L, Yi T, Qin L, Manes TD, Kulkarni S, Lorber MI, Rodriguez FC, Choi JM, Tellides G, Pober JS, **Kawikova (co-corresponding author)**, Bothwell AL. *Peroxisome proliferator-activated receptor-gamma agonists prevent in vivo remodeling of human artery induced by alloreactive T cells*. Circulation. 2011 Jul 12;124(2):196-205.
- Tobiasova Z, van der Lingen KH, Scahill L, Leckman JF, Zhang Y, Chae W, McCracken JT, McDougale CJ, Vitiello B, Tierney E, Aman MG, Arnold LE, Katsovich L, Hoekstra PJ, Volkmar F, Bothwell AL, **Kawikova I (corresponding author)**. *Risperidone-related improvement of irritability in children with autism is not associated with changes in serum of epidermal growth factor and interleukin 13*. J Child Adolesc Psychopharmacol. 2011 Dec;21(6):555-64.
- McKinley JW*, Shi Z*, **Kawikova I*** (* **First three authors contributed at the same level**), Hur M, Bamford IJ, Sudarsana Devi SP, Vahedipour A, Darvas M, Bamford NS. *Dopamine deficiency reduces striatal cholinergic interneuron function in models of Parkinson's disease*. Neuron 2019 Sep 25; 103 (6) 1056-1072e.

III) EXPERIENCE IN EDUCATION

HONORS AND RECOGNITION

- 2021 Gordon Clark Ramsey Award for Excellence in Creative Teaching, Hartford University
- 2023 Faculty Development Award, Hartford University

COURSES TAKEN TO DEVELOP MODERN PEDAGOGY SKILLS

- 2016 *Mentoring for Mentors*, Yale Center of Clinical Investigation
- 2016 *Scientific teaching*, Yale Center for Teaching and Learning
- 2016 *The Leading Edge: Professional Development Experience for Yale Women*
- 2018 *Curriculum Design*. Yale Center for Teaching and Learning

COURSES TAUGHT

Classroom teaching of undergraduate and graduate students

(Teaching of medical students and graduates is outlined in Part I)

2018 - 2020 University of Bridgeport, CT, **Anatomy and Physiology** Lectures and Labs

2018 - 2023 Netter Medical School, Quinnipiac University, CT, **Clinical Cases**

2020 - 2023 University of Connecticut, Storrs, CT, **Pathobiology** (4 credit course)

2019 - University of Hartford, West Hartford, CT

Graduate Neuroscience Program (4 credit courses): Neuroanatomy, Neuropharmacology, Neuroimmunology, Pathophysiology for Neuroscientists, Topics in Neuroscience (Journal Club), Advanced Molecular Techniques (Labs), Scientific writing, Clinical Neurology I (Introduction), Clinical Neurology II (Neuroimaging), Neuro-ethics, Evidence Based Neuroscience (Clinical research), Individual studies.

Undergraduate students (4 credit courses) Anatomy and Physiology, Introduction to Neuroscience (labs); General Biology for Non-major students; Human body for Non-major students

GRANT HISTORY

Agency: Hartford University

I.D. Teaching grant

Title: *Cumulative disparities alter our brains and behavior: How can we improve ethical outcomes?*

P.I. Ivana Kawikova, MD, PhD; Total cost for project period: \$2,000; Project Period: 9/1/2020-6/30/2021