Prof. dr. Igor Weber

PERSONAL: Born February 4, 1963, Varaždin, Croatia. Married, two children.

Contact: Ruđer Bošković Institute (RBI), Bijenička 54, HR-10000 Zagreb
E-mail: Igor.Weber@irb.hr

CURRENT EMPLOYMENT AND DUTIES

- *2016-*: Member of the Board of Governors, RBI
- *2016-*: Head of the Laboratory of Cell Dynamics, Division of Molecular Biology, RBI
- *2014-*: Senior scientist (tenured position), Division of Molecular Biology, RBI
- *2005-*: Research Group Leader
- Elected Professor at Universities of Zagreb (Cell biology, *2012-*) and Split (Biophysics, *2015-*)
- Head of the Core facility for confocal microscopy, RBI

PREVIOUS WORK EXPERIENCE

- *2005-2016*: Head of the Division of Molecular Biology, RBI
- *2013-2014*: Assistant director for science and education, RBI
- *2009-2014*: Senior scientist, Division of Molecular Biology, RBI
- *2005-2009*: Senior research associate, Division of Molecular Biology, RBI
- *2002-2005*: Research associate, Division of Molecular Biology, RBI
- *1996-2002*: Postdoc / staff scientist, Cell Biology Department, Max-Planck-Institute for Biochemistry
- *1992-1995:* Phd student, Department of Physics – Biophysics, Technical University Munich
- *1988-1992:* Teaching assistant, Faculty of pharmacy and biochemistry, University of Zagreb

EDUCATION

- *1992-1995*: PhD, E22 Institute for Biophysics. TU-Munich, GER, Supervisor E. Sackmann.
- *1988-1991*: Master of Science, Faculty of Science, University of Zagreb, Croatia.
    - 1988 Diploma work at the Department of Physics, University of Zagreb.

TEACHING AND SUPERVISION

- Currently supervising 1 PostDoc
- Supervised 5 PhD students and 5 Master students
- *2022-* Function and regulation of the cytoskeleton, pregraduate course, graduate programme in Molecular biology, Faculty of Science, University of Zagreb, lecturer
- *2007-2015* Experimental methods of physics in biophysics / Advanced light microscopy, postgraduate course, postgraduate doctoral programme in Biophysics, Faculty of Natural Sciences, University of Split, lecturer
- *2007-* Cell biophysics, postgraduate course, postgraduate doctoral programme in Biophysics, Faculty of Natural Sciences, University of Split, lecturer
- *2006-* Experimental methods in biophysics / Advanced light microscopy, postgraduate course, postgraduate doctoral programme in Biophysics, Faculty Science, University of Zagreb, lecturer
- *2005-2015* Cell biophysics, postgraduate course, postgraduate doctoral programme in Biophysics, Faculty of Science, University of Zagreb, lecturer

MEMBERSHIPS

- European microscopy society (member of the Executive board, *2016-2024*)
- European Light Microscopy Initiative (ELMI)
- Croatian microscopy society (president, *2012-2016*)
- Croatian society for theoretical and mathematical biology (president, *2005-2006*)
- Croatian biophysical society
- Croatian society of biochemistry and molecular biology
- Croatian society of natural sciences

REFEREEING

- Referee for Croatian Science Foundation (CSF), Croatian ministry of science (CMS) - Committee for scientific societies and conferences and Committee for research infrastructure and Medical Research Council (UK)
- *Ad hoc* reviewer: PNAS USA, Journal of Cell Science, Cell Death & Disease, Cytometry A, Biointerphases, Cell Biochemistry and Biophysics, Small GTPases, Molecular Biology of the Cell, Physical Review Letters, Periodicum Biologorum

SELECTED PROJECTS

- *2019–23* Croatian-Swiss Research Programme (CSRP 2017–2023), Swiss-Croatian project: Phagocytosis and Macropinocytosis: a mechanistic view (with Pierre Cosson, University of Geneva), co-PI
- *2018–22* CSF/European Social Fund, Young reserchers' career development project – training of doctoral students, PI
- *2016–20* COST action NEUBIAS (Network of European BioImage Analysts), Management Committee member
- *2015–16* CMS/European Social Fund, Research fellowships for professional development of young researchers and postdocs: Interdisciplinary research in cell biology – InterBio, Coordinator
- *2015–19* CSF, Oscillatory dynamics of the cytoskeleton (PI: Iva Tolić), Working package leader
- *2015–16* DAAD and CMS, Bilateral German-Croatian project: Highly resolved imaging of Rac1 signaling in motile cells (with Carsten Beta, Potsdam University), co-PI
- *2008–09* DAAD and CMS, Bilateral German-Croatian project: Analysis of the cytoskeleton dynamics during phagocytosis and the cell motility (with Jan Faix, Hannover Medical School), co-PI
- *2007–10* Unity through Knowledge Fund, UKF 1A grant: Biophotonics approach to regulation of the actin cytoskeleton dynamics by small GTPase proteins, PI
- *2007–14* CMS: Regulation of the cytoskeleton dynamics in cell migration and cytokinesis, PI
- *2006–07* DAAD and CMS, Bilateral German-Croatian project: Dynamics of the cortical recruitment of a protein complex (with Jan Faix, Hannover Medical School), co-PI
- *2005–06* CMS IT technology project: Volume rendering and three-dimensional analysis of microscopical fluorescence distributions, PI

DISSEMINATION RECORD

- More than 30 invited lectures at conferences, including:
  - *Adhere 1 – Conference on Cell Adhesion, Zadar, 2023*
  - *16th Multinational Congress on Microscopy, Brno, 2022*
  - *45th FEBS Congress, Ljubljana, 2021*
  - *15th Multinational Congress on Microscopy, Belgrade, 2019*
  - *FEBS 3+ Meeting 'From molecules to living systems', Siofok, Hungary, 2018*
  - *International Dictyostelium Conference, Geneva, 2017*
  - *12th Meeting of the Slovenian Biochemical Society with International Participation, Bled, 2017*
  - *10th International Congress of the NDP Kinase/Nm23/Awd Family, Dubrovnik, 2016*
  - *Congress of the Croatian Society of Biochemistry and Molecular Biology, Zadar, 2014.*
  - *Physical Biology of Cancer, Torino, 2013.*
  - *Physics of Cells: From the Edge to the Heart, Primošten, 2009.*
  - *EMBO/HHMI Central Europe Scientists Meeting, Dubrovnik, 2006.*
- Conferences – organization and board member:
  - International Advisory Board member: International Microscopy Congress 2018 (Sydney), European Microscopy Congress 2024 (Kopenhagen)
  - Conference Chairman: 13th Multinational Congress on Microscopy in Rovinj (2017) and 17th annual ELMI meeting in Dubrovnik (2017)
  - President of the Program Committee: 3rd Croatian Microscopy Congress 2015, Zadar
  - Program Committee member: Regional Biophysics Conferences 2012 (Kladovo), 2010 (Primošten), 2009 (Linz), 2007 (Balatonfüred); Multinational Congresses on Microscopy 2015 (Eger), 2003 (Pula); 2nd Croatian Microscopy Congress 2006 (Topusko)

EXPERTISE

Cell signaling, motility and cytoskeleton research. Particular strength in the application of advanced microscopy, combined with the quantitative image analysis and mathematical modelling, to investigation of protein function, localization and dynamics in live cells.

PUBLICATION RECORD

- More than 60 papers on topics in cell biology and biophysics, light microscopy and image analysis, including 1 in *Science*, *Nat. Commun*. and *Curr. Opin. Cell Biol.*, 2 in *PNAS USA* and *J. Cell Sci.*, and 3 in *J. Cell Biol.*, *EMBO J.*, and *Curr. Biol*. Over 2300 citations, h-factor 22.
- Selected publications

(1) Mijanović, L., **Weber, I.** (2022). Adhesion of *Dictyostelium* Amoebae to Surfaces: A Brief History of Attachments. ***Front. Cell. Dev. Biol.*** 10: 910736. doi: 10.3389/fcell.2022.910736.
(2) Filić, V., Mijanović, L., Putar, D., Talajić, A., Ćetković, H., **Weber, I.** (2021). Regulation of the Actin Cytoskeleton via Rho GTPase Signalling in *Dictyostelium* and Mammalian Cells: A Parallel Slalom. ***Cells*** 10(7): 1592. doi: 10.3390/cells10071592.
(3) Marinović, M., Mijanović, L., Šoštar, M., Vizovišek, M., Junemann, A., Fonović, M., Turk, B., **Weber, I.**, Faix, J., Filić, V. (2019). IQGAP-related protein IqgC suppresses Ras signaling during large-scale endocytosis. ***Proc. Natl. Acad. Sci. USA*** 116(4): 1289. doi: 10.1073/pnas.1810268116.
(4) Filić, V., Marinović, M., Šoštar, M., **Weber, I.** (2018). Modulation of small GTPase activity by NME proteins. ***Lab. Investig.*** 98: 589.
(5) Marinović, M., Xiong, H., Rivero, F., **Weber, I.** (2018) Assaying Rho GTPase–dependent processes in *Dictyostelium discoideum*. ***Methods Mol. Biol.*** 1821: 371.
(6) Junemann, A., Filić, V., Winterhoff, M., Nordholz, B., Litschko, C., Schwellenbach, H., Stephan, T., **Weber, I.** and Faix, J. (2016). A Diaphanous-related formin links Ras signaling directly to actin assembly in macropinocytosis and phagocytosis. ***Proc. Natl. Acad. Sci. USA*** 113: E7464.
(7) Ramalingam, N., Franke, C., Jaschinski, E., Winterhoff, M., Lu, Y., Brühmann, S., Junemann, A., Meier, H., Noegel, A.A., **Weber, I.**, Zhao, H., Merkel, R., Schleicher, M., and Faix, J. (2015). A resilient formin-derived cortical actin meshwork in the rear drives actomyosin-based motility in 2D-confinement. ***Nat. Commun.*** 6: 8496 doi: 10.1038/ncomms9496.
(8) Filić, V., Marinović, M., Faix, J. and **Weber, I.** (2014). The IQGAP-related protein DGAP1 mediates signaling to the actin cytoskeleton as an effector and a sequestrator of Rac1 GTPases. ***Cell. Mol. Life Sci.*** 71: 2775.
(9) Antolović, V., Marinović, M., Filić, V. and **Weber, I.** (2014). A simple optical configuration for cell tracking by dark-field microscopy. ***J. Microbiol. Meth.*** 104: 9.
(10) Faix, J. and **Weber, I.** (2013). A dual role model for active Rac1 in cell migration. ***Small GTPases*** 4: 110.
(11) Filić, V., Marinović, M., Faix, J. and **Weber, I.** (2012). A dual role for Rac1 GTPases in the regulation of cell motility. ***J. Cell Sci.*** 125: 387.
(12) **Weber, I.** (2006). Is there a pilot in a pseudopod? ***Eur. J. Cell Biol.*** 85: 915.
(13) Medalia, O., **Weber, I.**, Frangakis, A.S., Nicastro, D., Gerisch, G. and Baumeister, W. (2002). Macromolecular architecture in eukaryotic cells visualized by cryoelectron tomography. ***Science*** 298: 1209.
(14) **Weber, I.**, Neujahr, R., Du, A., Köhler, J., Faix, J. and Gerisch, G. (2000). Two-step positioning of a cleavage furrow by cortexillin and myosin II. ***Curr. Biol.*** 10: 501.
(15) Gerisch, G. and **Weber, I.** (2000). Cytokinesis without myosin II. ***Curr. Opin. Cell Biol.*** 12: 126.
(16) **Weber, I.**, Gerisch, G., Heizer, C., Murphy, J., Badelt, K., Stock, A., Schwartz, J.-M. and Faix, J. (1999). Cytokinesis mediated through the recruitment of cortexillins into the cleavage furrow. ***EMBO J.*** 18: 586.
(17) **Weber, I.**, Wallraff, E., Albrecht, R. and Gerisch, G. (1995). Motility and substratum adhesion of *Dictyostelium* wild-type and cytoskeletal mutant cells: a study by RICM/bright-field double-view image analysis. ***J. Cell Sci.*** 108: 1519.

WEB SITES

- http://www.irb.hr/eng/People/Igor-Weber
- http://www.linkedin.com/profile/view?id=203376231
- http://www.researchgate.net/profile/Igor_Weber/
- http://www.researcherid.com/rid/J-3947-2012