

Robin Lorenz, MD, PhD
Executive Director, Research Pathology
Genentech, Inc.

Education:
B.S. Stanford University, 1984
MD, PhD, Washington University in St. Louis, 1990
Clinical Pathology Resident, Barnes-Jewish Hospital, St. Louis, 1994

I am humbled to be nominated for President-Elect of The Histochemical Society. The Society has given me a community of peers and mentors, and its publications, leadership opportunities, and service have helped to shape my career. If elected, I would work to make HCS a place where scientists at every career stage can learn, lead, and connect.

Research and Career:

After residency I joined the Washington University faculty, where I directed a laboratory studying chronic inflammation of the gastrointestinal tract. In 2002 I joined the University of Alabama at Birmingham, where my laboratory continued to investigate the mucosal immune system (Google Scholar link). At UAB I directed the Summer in Biomedical Science Undergraduate Research Program, the UAB MD/PhD Training Program, and the Physician Scientist Development Office. I am now Executive Director, Research Pathology at Genentech, where my department supports biomarker strategy, development, and deployment across the drug development pipeline. I have served HCS as Councilor (2014–2020) and as chair of the Publications Committee (2015–2022 and 2025–present). I also served as the Society's representative to the FASEB Board of Directors (2020–2024).

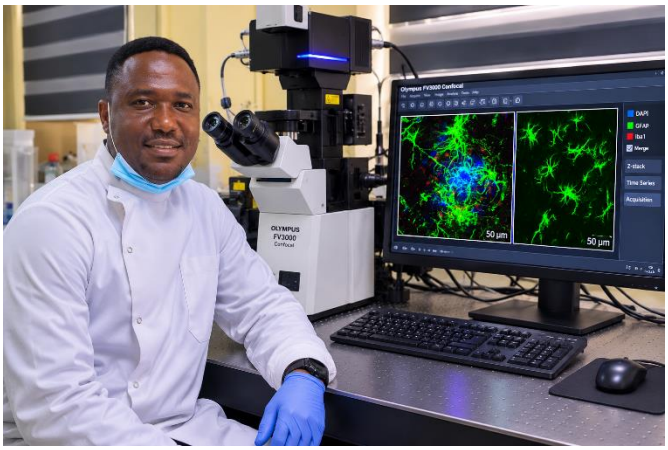
My Vision for The Histochemical Society:

HCS brings together scientists who develop and use visual techniques to reveal the biochemical and molecular structure and function of cells, tissues, and organs, and it shares that knowledge through education and outreach. If elected, I would focus on two priorities:

1. Supporting trainees and early-career scientists. I would work to expand mentoring, leadership opportunities, and access to the Society's awards and grants for scientists at all levels, including physician-scientists and those moving into industry.

2. Connecting academic and industry scientists. Tissue-based visual methods are central to biomarker and translational work. I would strengthen links between academic members and colleagues in pharma and biotech so that members can share methods, career paths, and collaborations. This will include expanding education and outreach through both in-person and virtual meetings, as well as workshops and publications.

I bring experience from interactions with both HCS and FASEB's governance, publications and training programs, as well as in academia and industry. I would be honored to serve HCS as President-Elect and to help the Society continue its work.



Babajide Ajayi, PhD

Associate Professor, Biochemistry Unit, Department of Chemical Sciences, Ajayi Crowther University, Nigeria.

EDUCATION

Postdoc (UFRGS, Brazil), Postdoc (UFSM, Brazil),Ph.D., University of Ibadan, Ibadan, Nigeria (2017); M.Sc., University of Ibadan, Ibadan, Nigeria (2011); B.Sc., Bowen University, Nigeria (2007)

SELECTED SERVICE, HONORS, AND AWARDS

Conselho Nacional de Desenvolvimento Científico e Tecnológico Fellowship (2024), Coordenação de Aperfeiçoamento de Pessoal de Nível Superior(2023), 34th European Organization for Research and Treatment of Cancer (EORTC), the National Cancer Institute (NCI) and the American Association for Cancer Research (AACR) symposium travel grant (2022), Histochemical Society travel grant (2022), American Association of Cancer Research Scholar-in-Training Award (2022), American Association of Cancer Research Global Scholar-in-Training Award (2022), American Association of Cancer Research Scholar-in-Training Award (2021), American Association of Cancer Research Global Scholar-in-Training Award (2021), Soutien Afrique et Moyen-Orient Societies des Neurosciences (2019), European Academy of Allergy and Clinical Immunology Fellowship (2019), European Molecular Biology Organization Fellowship (2016), Bill and Melinda Gates foundation Fellowship for Keystone Symposia (2015), West African Society of Toxicology Prize for Best Poster Presentation, (2014), Best Graduating Masters Student in Biochemistry, University of Ibadan (2011). Volunteer for American society for clinical oncology and Society for immunotherapy of cancer (2022). Poster Judge for Society for Mathematical Biology and Biophysical society.

SCIENTIFIC SOCIETIES

Histochemical Society, Sigma-xi, African Organization for Research and Training in Cancer, Society for Immunotherapy of Cancer, American Society of Clinical Oncology, American Association of Cancer Research, Society of Toxicology, Biochemical Society, Society of Free Radical Research Africa, West Africa Society of Toxicologist, European Academy of Allergy and Clinical Immunology, Federation of Clinical Immunology Societies, Society for Mathematical Biology.

RESEARCH INTEREST

My research interest includes digging deep into disease biology in cancer and neuroscience, so as to develop transformative solution that addresses broad pathology that targets the causes of cancer and neurodegenerative disease rather than the disease process at work. I utilize research tools such as immunohistochemistry and immunofluorescence to investigate key mechanism that turn protective signaling pathways it into pathological conditions and how to apply this knowledge to create smarter and faster diagnostic and treatment approaches. My long-time career ambition is to turn science into medicine by identifying breakthrough therapy for better outcome of patients

VISION FOR HISTOCHEMICAL SOCIETY

It would be an honor for me to serve as a Histochemical Society council member in order to support the organization's mission of developing the use of visual techniques to provide biochemical and molecular information about the structure and function of cells, tissues, and organs, as well as effectively communicating this knowledge through science education and outreach. As an elected representative of the Histochemical Society, I would work with the executive team to advance the composition and diversity of the membership (both international and domestic); improve career development workshops, conferences, short courses, and webinars for trainees and early faculty; and work closely with the executive team to augment the Histochemical Society's vision through strengthened relationships with government, foundations, research institutes, universities, hospitals, and industry. I am equally committed to promoting team science and supporting the next generation of histochemical researchers. I will also help the Histochemical Society committees and its constituency bridge gaps between disciplines to accelerate fundamental and future discoveries. In addition, I intend to continue working with Histochemical Society committees and executives to position Histochemical Society as a champion for equity in histochemical research by cultivating a diverse community of scientists within the Histochemical Society to broaden the overall vision, mission, and impact of the Histochemical Society.



Ruslan I. Dmitriev, PhD, Associate Professor
06-November-2026

Vision for the Society:

I am excited to apply for the Council member position at Histochemical Society. I hope that I can help this society to evolve by supporting its scientific mission and excellence (my inter-disciplinary research expertise in dynamic visualisation of biochemical and structural organisation of cells, tissues and organs using FLIM and PLIM bio-, chemical and nanosensors), harmonisation and standardisation of imaging approaches across the globe (expertise in teaching and mentoring in imaging methods, e.g. inter-university courses in Flanders and EU, including FEBS imaging course) and connecting research expertise between the US-based researchers and overseas, via participation in Flanders and Euro-BioImaging networking activities. Being a research group leader (Faculty of Medicine & Health Sciences, Ghent University, Belgium), with the primary focus on fluorescence lifetime imaging microscopy-assisted analysis and manipulation of organoids, 3D tissue constructs and drug delivery models, I am also involved in Ghent Light Microscopy Core, Flanders BioImaging consortium (connecting the centres of excellence in KU Leuven, UHasselt, Ghent, Antwerp and VIB with Euro- and Global BioImaging consortia), EU-UK wide Horizon consortium 'FLIMagin3D', and numerous international collaborations outside of the EU (e.g. HHMI Janelia research campus, University of Nottingham, Manchester and King's College London).
I am convinced that my multi-national experience (born in Soviet Union, grown up in Russian Federation, matured as a scientist in Ireland, performed research in more than 3 countries across the globe) is a strong 'plus' in understanding and addressing minority, equity and diversity issues as well as internationalisation of research. Seeing HCS as a premier society in histochemistry and cell-based imaging, I hope that my research and educational experience, vision and growing research network can help supporting its international & global missions.

Please find my recent bio-sketch in the following pages.

BIOGRAPHICAL SKETCH

NAME: Ruslan I. Dmitriev, PhD

POSITION TITLE: Associate Professor, Head of Tissue engineering and Biomaterials Imaging Group; Chairman of Ghent Light Microscopy Core (GLIM)

EDUCATION/TRAINING

INSTITUTION AND LOCATION	DEGREE	Start Date	Completion Date	FIELD OF STUDY
Moscow State Academy of Fine Chemical Technology, Moscow, Russia	B.Sc. (distinction)	09/1998	06/2002	Chemistry and Technology
Moscow State Academy of Fine Chemical Technology, Moscow, Russia	M.Sc. (distinction)	09/2002	06/2004	Chemistry and Technology of Biologically Active Compounds
Shemyakin-Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences, Moscow, Russia	Ph.D.	09/2004	05/2008	Bioorganic chemistry
DCU Ryan Academy, Dublin, Ireland	Certificate of completion	01/2013	06/2013	'Get started technology venture' Course for entrepreneurs

A. Personal Statement

I am a microscopist focusing on developing bioconjugate, nanoparticle- and scaffold-based biosensors for live cell 4D imaging. My primary research interest is in advancing **quantitative, live and multi-parameter** fluorescence (FLIM) and phosphorescence (PLIM) lifetime imaging microscopies. These approaches are instrumental for metabolic, O_2, FRET and many other dynamic imaging modalities, applicable to 3D organoids & related tissue models. During my doctoral and postdoctoral training I gained interdisciplinary experience in studies of cell metabolism, hypoxia and development of phosphorescent high-performance biosensors. In 2014-2019 I formed Metabolic Imaging Group at University College Cork, followed up by the industry fellowship at Agilent technologies (2019-2020), before joining Ghent University (2020) for tenure-track Professor position. My current ambitions are in promoting live 3D-FLIM approaches to **visualize the single cell metabolism & oxygenation within organoids and *in vivo* models**. To date, I've gained research leadership in the areas of quenched phosphorescence-based detection of molecular oxygen and multi-parameter FLIM of **spheroids, neural and intestinal organoids**, which is evident by number of reviews, editorship of 2 books (2017, 2018), organizing the research meetings and the society membership (HCS, ASCB, BPS). My industrial experience is in generating 3 invention disclosures, 1 patent application and collaborations with SME and MNE such as Luxcel Biosciences (now part of Agilent Technologies), Lambert Instruments, Becker & Hickl GmbH, Leica Microsystems and Rousselot. Since 2026, I am also serving as a chairman at Ghent Light Microscopy Core, part of Flanders Bio-Imaging and Euro-BioImaging consortia. Please find below a list of my **on-going** research projects:

1. **Inter-university special research fund (VLIR-iBOF)** grant 'MINDFUL' IBOF/25/28. *Lipid metabolism directed crosstalk between microglia and neurons as driver of neurodegeneration in MS and AD.* Promotor at UGent. **2025-2028**
2. **Special Research Fund (BOF) Interdisciplinary research project** (BOF/IOP/2022/058) (Co-PI with Prof. S. Vergult): *IMAGIBRAINDD: IMAGIng-assisted human BRAIn organoid engineering for studying and treating NeuroDevelopmental Disorders*. **2022-2028**
3. **HORIZON-MSCA-2021-DN-01** (101073507) fliMAGIN3D (Co-PI, 12 partners): *Doctoral Network for a Shared Excellence of Fluorescent Lifetime Imaging Microscopy in Biomedical Applications*. 3 PhD students for my team. **2023-2026**
4. **Research Foundation Flanders (FWO) Medium-size infrastructure grant** (I004124N) Two-photon upgrade of Stellaris 8 FLIM microscope, with 22 co-promotors, 660,426.76 euro. **2024-2028**

Please find below a list of ***four of my significant publications*** directly related to this research program:

1. Mamillapalli VNK, Okkelman IA, Akhssas F, Sambucari G, Debruyne AC, Beniwal D, Bucher C, Donato MD, Dmitriev RI Filatov MA: Hydration-Gated Photoinduced Electron Transfer in BODIPY Dyes. ***Angewandte Chemie International Edition*** 2026, **n/a**(n/a):e3726851.
2. Okkelman IA, Zhou H, Borisov SM, Debruyne AC, Lefebvre AEYT, Leomil Zoccoler M, Chen L, Devriendt B, Dmitriev RI: Visualizing the internalization and biological impact of nanoplastics in live intestinal organoids by Fluorescence Lifetime Imaging Microscopy (FLIM). ***Light: Science & Applications*** 2025, **14**(1):272.
3. Vanhove L, Van Gansbeke T, Devriendt B, Van der Meeren R, Dmitriev RI, Okkelman IA: Lack of biochemical signalling in GelMA leads to polarity reversion in intestinal organoids independent from mechanoreciprocity**.** ***Journal of Tissue Engineering*** 2025, **16**:20417314251345000.
4. Debruyne AC, Okkelman IA, Heymans N, Pinheiro C, Hendrix A, Nobis M, Borisov SM, Dmitriev RI: Live Microscopy of Multicellular Spheroids with the Multimodal Near-Infrared Nanoparticles Reveals Differences in Oxygenation Gradients. ***ACS Nano*** 2024, **18**(19):12168-12186.

B. Positions, scientific appointments, and Honors

Employment (positions held):

2025-present – Associate Professor, Department of Human structure and repair, Ghent University, Ghent, Belgium
2020-2025 – Assistant Professor (tenure track), Department of Human structure and repair, Ghent University, Ghent, Belgium
2014-2020 (full-time) – Research Fellow/ Starting Investigator, School of Biochemistry, University College Cork, Ireland
2018-2020 (part-time) – Chief Researcher, Institute for Regenerative Medicine, Sechenov Medical University, Moscow, Russia
2014-2014 – Senior Postdoctoral researcher (Tyndall National Institute – University College Cork, IPIC project)
2008-2012 – Postdoctoral Researcher, School of Biochemistry, University College Cork
2004-2008 – Junior Scientist (part-time), Shemyakin-Ovchinnikov Institute of Bioorganic Chemistry, Russian Academy of Sciences

Other appointments:

2022-present – Member of the steering committee 'Ghent Light Microscopy Core' (GLIM), **chairman** (since 2026)

2020-present – Member of the 'Ghent Gut Inflammation Group' (GGIG) https://www.ggig.be
2019-2020 – Industry fellow at the Agilent Technologies (Agilent, Little Island, Cork)
2004-2008– Analyst (part time), Newcastle Technical Centre of Procter & Gamble, Moscow, Russia (Affiliate lab)

Honors, professional membership and books editorship:

- **Early Career Investigator** Award (Histochemical Society)
- 2012-2025: Continuously secured **16** research grants, total worth ~9.8M euro (see section D)
- 2005-2024: Received **15** travel grants to attend the international conferences and support research visits, from the American Society of Biochemistry and Molecular Biology (ASBMB, graduate student and postdoctoral travel awards for Experimental Biology symposia; USA; 2007, 2011, 2012, 2014, 2015), American Society for Cell Biology (ASCB, postdoctoral travel award for Annual Meeting; USA; 2011, 2017, 2019, 2022), Society of General Physiologists (USA; 2005), Biophysical Society (2020), Research Foundation Flanders (FWO, 2022, 2023), HHMI Janelia Visitor Scientist Program (2024), Biophysical Society Bridge Funding Award (2026) and Histochemical Society Travel Award (2026).
- Edited, co-edited and authored **3 books:**

1. Papkovsky DB, Dmitriev RI (eds.): Quenched-phosphorescence Detection of Molecular Oxygen: Applications in Life Sciences: The Royal Society of Chemistry; 2018. ISBN 978-1-78801-175-4.
2. Dmitriev RI (ed.): Multi-Parametric Live Cell Microscopy of 3D Tissue Models: Springer International Publishing AG 2017; 2017. ISBN 978-3-319-67357-8.
3. Papkovsky DB, Zhdanov AV, Fercher A, Dmitriev RI, Hynes J: Phosphorescent Oxygen-sensitive probes. Springer Briefs, Basel, 2012. ISBN 978-3-0348-0524-7.

- Member of Histochemical Society (since 2022), American Society for Cell Biology (since 2011, in 2017-18: ambassador), Tissue engineering and regenerative medicine (TERMIS, Invited speaker, co-organiser of symposia at the meetings, since 2016).
- (2022-onwards) Co-editor of the methods collection at Journal of Visualized Experiments (**JoVE**): Quantitative live cell imaging of 3D models: https://www.jove.com/methods-collections/902
- 2019 – 'Best paper award' (Irish Photonic Integration Centre, Cork, Ireland)

Teaching responsibilities

2020-present – teaching (lecturer-in charge and co-lecturer) M.Sc. courses in biomedical science and engineering (Ghent University), Tissue engineering, Biomaterials and Tissue engineering, Image to numbers (6 in total, 29 credits). Major in Tissue Engineering M.Sc. in Biomedical Sciences Program responsible
2020-present – invited lecturer at Trinity College Dublin for M.Sc. Advanced imaging course

Peer-review and grant review activities

Referee for research journals https://www.webofscience.com/wos/author/record/1752038
2017 – ACS (American Chemical Society) Reviewer Lab certificate
2015 – Certificate of 'Outstanding contribution in reviewing'. Sensors and Actuators B: Chemical journal (Elsevier)
Evaluation of grant applications (Swiss National Fund SNF, 2018, Dutch Research Council N.W.O., 2019, IBiSA France, 2022). Reviewer of nominations Canada Research Chairs (2022), Israel Science Foundation (ISF, 2025), Frans van Cauwelaertprijs KVAB (2025).

Session chair / Program committee

2026 - Program committee “Translational Fluorescence Lifetime–Based Molecular Imaging” (BO111, **Photonics West,** SPIE conference)

2025 – **Co-organizer** of the Macromolecular Chemistry & Soft Matter Connects international symposium (Ghent, 18-19 December 2025, with Peter Dubruel and Bruno De Geest)

2025 **ESMI EMIM 2026 conference** reviewer / programming chair ‘Theranostics, Multimodal Agents | Probes/Reporter Genes”

2023 **TERMIS-EU Manchester** (Mar-2023) / Imaging symposium / Co-organizer, co-chair and invited speaker

2022 **TERMIS-EU Krakow /** Imaging symposium / Co-organizer and co-chair

2021 **TERMIS-World Congress** / Online-Maastricht NL / Section ‘Advanced spatiotemporal imaging for regenerative medicine’ (Co-organizer and co-chair).

2020-cancelled due to COVID-19 pandemic **TERMIS-EU 2020 Meeting** / Manchester, UK / Oral presentation (invited speaker, **section organizer and co-chair**)

2019 **Sechenov International Biomedical Summit** / Moscow, Russia / **Session organizer and Chair**

2018 **American Society for Cell Biology (ASCB)** annual meeting / poster abstract programming

2018 **TERMIS – World Congress** / Kyoto, Japan / **Organizer and Co-Chair of** ‘Multi-parametric quantitative imaging of live cells in 3D tissue models’ symposium

2016 **TERMIS-EU meeting** / Uppsala, Sweden / **Co-Chair** of ‘Non-Destructive Imaging in TERM’ session

Invited talks

2027 Photonics West (San Francisco, 1-2 Feb 2027) (forthcoming)

2026 Inter-University Course on Advanced Light Microscopy (iCALM), October 2026

2026 Engineering life: advances in bioengineering and drug delivery. Joint TU/e-UGhent symposium (22 October 2026, Ghent)

2026 FEBS Practical Course ‘Functional Imaging of Cellular Dynamics’ / Amsterdam, NL (instructor)

2026 BELSACT Meeting 2026 (Ghent, Mar-2026)

2026 HiLight symposium (Brunel University, Uxbridge, UK, 4-5 Mar 2026)

2025 FLIMposium (King’s College London, launch of new Wellcome Trust Bio-Imaging centre, May-2025)

2024 SPAOM meeting (Toledo, Nov-2024)

2024 4th Inflammation & Hypoxia symposium (Munster, Sep-2024)

2024 FEBS Practical Course ‘Functional Imaging of Cellular Dynamics’ / Amsterdam, NL

2024 Belgian society for animal cell technology 2024 scientific meeting / Gosselies, Belgium

2024 FLIMagin3D consortium 1st networking event / Dublin, Ireland

2023 Albany Medical College / Albany, NY (seminar)

2023 VIB Cancer Biology Tech talk 2022-23 / Leuven, Belgium (seminar)

2022 Leuven Advanced Microscopy Symposium 2022

2022 32nd Annual Meeting of the German Society for Cytometry (DGfZ) / Berlin

2019 Sechenov International Biomedical Summit / Moscow, Russia

2018 Sechenov International Biomedical Summit / Moscow, Russia

2017 FLIM workshop / Prague, Vestec, Czech Republic

2016 TERMIS-EU meeting / Uppsala, Sweden

2006 1st International Young Scientists’ Conference / Kharkiv, Ukraine 2nd prize for best presentation

C. Contributions to Science

Addressing dynamics and heterogeneity of hypoxia and metabolic gradients in multicellular spheroid and organoid models.

My team focuses on multiplexed O_2 imaging of cancer cell evolution in 3D, developing 'metabolic FLIM' pipeline for addressing neurodevelopmental disorders using neural organoid models, and mechanical & biochemical interactions of polymer (bio)materials with small intestinal organoids. My team pioneered monitoring oxygenation in neurospheres (2013), small intestinal organoids (2017) and were among the first to visualize metabolic heterogeneity (affected by the medium & nutrient composition) of tumor spheroids & small intestinal organoids (2020-2024).

1. Dmitriev RI, Zhdanov AV, Nolan YM, Papkovsky DB: Imaging of neurosphere oxygenation with phosphorescent probes. ***Biomaterials*** 2013, **34**(37):9307-9317.
2. Okkelman IA, Foley T, Papkovsky DB, Dmitriev RI: Live cell imaging of mouse intestinal organoids reveals heterogeneity in their oxygenation. ***Biomaterials*** 2017, **146**:86-96.
3. Okkelman IA, Neto N, Papkovsky DB, Monaghan MG, Dmitriev RI: A deeper understanding of intestinal organoid metabolism revealed by combining fluorescence lifetime imaging microscopy (FLIM) and extracellular flux analyses. ***Redox Biology*** 2020, **30**:101420.
4. Peirsman A, Blondeel E, Ahmed T, Anckaert J, Audenaert D, Boterberg T, Buzas K, Carragher N, Castellani G, Castro F *et al*: MISpheroID: a knowledgebase and transparency tool for minimum information in spheroid identity. ***Nature Methods*** 2021. DOI: 10.1038/s41592-021-01291-4.
5. Debruyne AC, Okkelman IA, Heymans N, Pinheiro C, Hendrix A, Nobis M, Borisov SM, Dmitriev RI: Live Microscopy of Multicellular Spheroids with the Multimodal Near-Infrared Nanoparticles Reveals Differences in Oxygenation Gradients. ***ACS Nano*** 2024, **18**(19):12168-12186.

Development of intracellular phosphorescent O_2 probes for assessing cell hypoxia, cellular gradients and cell bioenergetics

As a postdoc, I contributed to advancing state-of-the-art of O_2 sensing based on the metalloporphyrin conjugates with cell-penetrating peptides and nanoparticles. These enabled studies of cell **bioenergetics** and **adaptation to hypoxia**, demonstration of **intracellular O_2 gradients in cell culture**, and indirectly catalyzed work and successful commercialization by colleagues inspiring a generation of researchers. This work and *state-of-the-art* are summarized in several high-impact review articles for the field (2012, 2013, 2015, 2018) and books (2012, 2018). This work also positively affected my career growth, helping to secure the follow-up funding from the Science Foundation Ireland (SFI, Starting Investigator grant 2014).

1. Dmitriev RI, Zhdanov AV, Ponomarev GV, Yashunski DV, Papkovsky DB: Intracellular oxygen-sensitive phosphorescent probes based on cell-penetrating peptides. ***Analytical Biochemistry*** 2010, **398:**24-33.
2. Dmitriev RI, Ropiak HM, Ponomarev GV, Yashunsky DV, Papkovsky DB: Cell-penetrating conjugates of coproporphyrins with oligoarginine peptides: rational design and application for sensing intracellular O_2**.** ***Bioconjugate Chemistry*** 2011, **22:**2507-2518.

3. Dmitriev RI, Zhdanov AV, Jasionek G, Papkovsky DB: Assessment of cellular oxygen gradients with a panel of phosphorescent oxygen-sensitive probes. ***Analytical Chemistry*** 2012, **84**(6):2930-2938.
4. Kondrashina AV, Dmitriev RI, Borisov SM, Klimant I, O'Brien I, Nolan YM, Zhdanov AV, Papkovsky DB: A phosphorescent nanoparticle-based probe for sensing and imaging of (intra)cellular oxygen in multiple detection modalities. ***Advanced Functional Materials*** 2012, **22**(23):4931-4939.

Developing multi-parametric FLIM of 3D tissue models and organoids

My research group in Cork (2014-2020) was among the first to demonstrate method for **monitoring the oxygenation of 3D tissue models** with the help of high-performance O_2-sensitive probes and PLIM method (Biomaterials, 2013; Biomaterials Sci 2014; CMLS 2014, Acta Biomater, 2015) and to combine it with the analyses of cell death, proliferation, cell temperature and markers of differentiation. Together with colleagues we also applied the FLIM and PLIM approaches to the **3D cancer spheroids** and **stem cell-derived intestinal organoid models**, demonstrating their utility for improved monitoring of their metabolism and viability (One, 2016, ACS Nano, 2015, Acta Biomater 2018, Adv Func Mater 2018). Currently (2023-present), we focus our efforts on visualizing polarity reversion in small intestinal organoids and its application to development of vaccines (2025), detection of micro- and nanoplastics (MNPs) and tissue engineering/ organ-on-a-chip applications:

1. Dmitriev RI, Kondrashina AV, Koren K, Klimant I, Zhdanov AV, Pakan JMP, McDermott KW, Papkovsky DB: Small molecule phosphorescent probes for O_2 imaging in 3D tissue models. ***Biomaterials Science*** 2014, **2**(6):853-866.
2. Dmitriev RI, Borisov SM, Düssmann H, Sun S, Müller BJ, Prehn J, Baklaushev VP, Klimant I, Papkovsky DB: Versatile Conjugated Polymer Nanoparticles for High-Resolution O_2 Imaging in Cells and 3D Tissue Models. ***ACS Nano*** 2015, **9**(5), 5275-5288.
3. Jenkins J, Borisov SM, Papkovsky DB, Dmitriev RI: Sulforhodamine nanothermometer for multi-parametric Fluorescence Lifetime Imaging Microscopy. ***Analytical Chemistry*** 2016, **88**(21):10566-10572.
4. Okkelman I. A., Dmitriev R. I., Foley T., Papkovsky, D. B.: Use of Fluorescence Lifetime Imaging Microscopy (FLIM) as a Timer of Cell Cycle S Phase. ***PLOS ONE*** 2016, **11**, e0167385.
5. O'Donnell N, Okkelman IA, Timashev P, Gromovykh TI, Papkovsky DB, Dmitriev RI: Cellulose-based scaffolds for fluorescence lifetime imaging-assisted tissue engineering. ***Acta Biomaterialia*** 2018, **80**:85-96.
6. *Sheehan A, Okkelman IA, Groslambert G, Bucher C, Dmitriev RI, Filatov MA: Optoelectronic Properties and Fluorescence Lifetime Imaging Application of Donor-Acceptor Dyads Derived From 2,6-DicarboxyBODIPY. ***Chemistry – A European Journal*** 2024, **n/a**(n/a):e202404188. **Cover image**: https://chemistry-europe.onlinelibrary.wiley.com/toc/15213765/2025/31/10
7. *Vanhoeijen R, Okkelman IA, Rogier N, Sedlačík T, Stöbener DD, Devriendt B, Dmitriev RI, Hoogenboom R: Poly(2-alkyl-2-oxazoline) Hydrogels as Synthetic Matrices for Multicellular Spheroid and Intestinal Organoid Cultures. ***Biomacromolecules*** 2025.

8. *Okkelman IA, Zhou H, Borisov SM, Debruyne AC, Lefebvre AEYT, Leomil Zoccoler M, Chen L, Devriendt B, Dmitriev RI: Visualizing the internalization and biological impact of nanoplastics in live intestinal organoids by Fluorescence Lifetime Imaging Microscopy (FLIM). ***Light: Science & Applications*** 2025, **14**(1):272.
9. *Vanhove L, Van Gansbeke T, Devriendt B, Van der Meeren R, Dmitriev RI, Okkelman IA: Lack of biochemical signalling in GelMA leads to polarity reversion in intestinal organoids independent from mechanoreciprocity**. *Journal of Tissue Engineering*** 2025, **16**:20417314251345000.
10. Chen L, Van Der Weken H, Zwaenepoel O, Okkelman IA, Aelvoet J, Van Denberghe E, Gettemans J, Dmitriev RI, De Geest BG, Cox E *et al*: Cell-specific mRNA delivery via nanobody-functionalized lipid nanoparticles. ***Journal of Controlled Release*** 2025, **388**:114365.

Contribution to the understanding of the mechanisms of cellular adaptation to the low oxygen environment (hypoxia), the stroke (oxygen and glucose deprivation).

This work was jointly performed with collaborators. Some of the main results are the demonstration of **augmented HIF signaling** under physiological O_2 levels in neuronal cells (Zhdanov et al, BBA, 2013), understanding of the **regulation of protein translation during stroke** (Andreev et al, Genome Biology, 2015) and discovery of the **ischemia-induced changes in histone acetylation** (Dmitriev, FEBS Lett 2015). The impact of these frontier research findings is expected to be in developing better therapies to prevent and improve survival of the tissue during stroke.

1. Zhdanov AV, Dmitriev RI, Golubeva AV, Gavrilova SA, Papkovsky DB: Chronic hypoxia leads to a glycolytic phenotype and suppressed HIF-2 signaling in PC12 cells. ***Biochimica et Biophysica Acta (BBA) - General Subjects*** 2013, **1830**(6):3553-3569.
2. Zhdanov AV, Dmitriev RI, Papkovsky DB: Bafilomycin A1 activates HIF-dependent signalling in human colon cancer cells via mitochondrial uncoupling. ***Bioscience Reports*** 2012, **32**:587-595.
3. Andreev D, O'Connor P, Zhdanov A, Dmitriev R, Shatsky I, Papkovsky D, Baranov P: Oxygen and glucose deprivation induces widespread alterations in mRNA translation within 20 minutes. ***Genome Biology*** 2015, **16**(1):90.
4. Dmitriev RI, Papkovsky DB: In vitro ischemia decreases histone H4K16 acetylation in neural cells. ***FEBS Letters*** 2015, **589**(1):138-144.
5. Barra J, Crosbourne I, Roberge CL, Bossardi-Ramos R, Warren JSA, Matteson K, Wang L, Jourd'heuil F, Borisov SM, Bresnahan E *et al*: DMT1-dependent endosome-mitochondria interactions regulate mitochondrial iron translocation and metastatic outgrowth. ***Oncogene*** 2024.

Molecular physiology and functional analysis of membrane ion-transporting proteins (mitochondrial transhydrogenase NNT and Secretory Pathway Calcium/ Manganese ATPase)

1. Arkblad EL, Tuck S, Pestov NB, Dmitriev RI, Kostina MB, Stenvall J, Tranberg M, Rydstrom J: A Caenorhabditis elegans mutant lacking functional nicotinamide nucleotide transhydrogenase displays increased sensitivity to oxidative stress. ***Free Radic Biol Med*** 2005, **38:**1518-1525.

2. Pestov NB, Dmitriev RI, Kostina MB, Korneenko TV, Shakhparonov MI, Modyanov NN: Structural evolution and tissue-specific expression of tetrapod-specific second isoform of secretory pathway Ca^{2+}-ATPase**.** ***Biochem Biophys Res Commun*** 2012, **417:**1298-1303.
3. Jenkins J, Papkovsky DB, Dmitriev RI: The Ca2+/Mn2+ -transporting SPCA2 pump is regulated by oxygen and cell density in colon cancer cells. ***Biochemical Journal*** 2016, **473**(16):2507-2518.

Please see my publications here:
Google Scholar https://scholar.google.com/citations?user=fAYmtSUAAAAJ&hl=en
University webpage: https://www.ugent.be/ge/hsr/en/research/tissue-engineering-and-biomaterials/overview.htm



Tracy Fischer, PhD
Associate Professor, Tulane University School of Medicine

Biography (brief)

Dr. Tracy Fischer is an Associate Professor in the Department of Microbiology and Immunology at Tulane University School of Medicine and an investigator at the Tulane National Biomedical Research Center. Her research focuses on the role of chronic neuroinflammation in neurodegenerative diseases, with particular emphasis on microglial dysfunction, neurovascular pathology, and blood–brain barrier alterations. Her laboratory integrates histological, immunohistochemical, molecular, and cellular approaches to investigate disease mechanisms in human tissues and experimental models.

Dr. Fischer currently serves on the Council of the Histochemical Society, contributing to grant and abstract reviews and representing the Society at scientific conferences. She recently joined the editorial board of the *Journal of Histochemistry & Cytochemistry*. She has a strong commitment to scientific education, mentorship, and advancing the application of histochemical approaches to understanding disease mechanisms.

Vision statement

I believe the Histochemical Society has an important role in advancing biomedical research by promoting approaches that connect molecular and cellular discoveries to their biological significance within tissues. As new technologies continue to expand our ability to investigate complex biological systems, it is essential that we also preserve and strengthen our appreciation for tissue organization, cellular interactions, and the biological context in which disease processes occur.

During my current term on Council, I have contributed to grant and abstract reviews and represented the Society at scientific conferences. If reelected, I would like to build on this service with a particular emphasis on education and the development of early-career scientists. I believe we should encourage young investigators not only to ask important scientific questions, but also to consider how their findings can be examined and understood at the tissue level. I would also like to support opportunities for interdisciplinary collaboration, methodological innovation, and scientific exchange that broaden the reach and impact of the Society.

My vision is for the Histochemical Society to remain a strong scientific community that advances rigorous tissue-based research while fostering the curiosity, critical thinking, and technical expertise of the next generation of scientists.



Rupak Thapa, PhD

Postdoctoral Research Fellow (T32/F32)
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Bio:

Dr. Rupak Thapa earned his Ph.D. in Molecular, Cellular & Systemic Physiology from the School of Medicine at Southern Illinois University, where his dissertation research identified and characterized novel regulators of human endometrial stromal fibroblast decidualization, including ATOH8, NR4A2, and the long non-coding RNA AC027288.3. He is currently a Postdoctoral Research Fellow in the Department of Pathology & Immunology at Baylor College of Medicine, where his research investigates the molecular mechanisms governing endometrial stromal cell decidualization and uterine receptivity, with a primary focus on the iron exporter SLC40A1 (ferroportin) and its role in oxidative stress, ferroptosis, and endometriosis-associated infertility. His work integrates primary human endometrial cell and organoid systems, mouse genetic models, and histochemical approaches, including immunohistochemistry, immunofluorescence, and confocal microscopy, alongside RNA-sequencing and omics analysis to define transcriptional and cellular networks underlying fertility and reproductive disease. Dr. Thapa is the recipient of the NIH/NICHD F32 Ruth L. Kirschstein Postdoctoral Individual Fellowship, the NIH/NICHD T32 Institutional Postdoctoral Training Fellowship, the Baylor College of Medicine Dean's Award of Excellence, and the Outstanding Dissertation Award from the Graduate School at Southern Illinois University. He has authored first-author publications in Biology of Reproduction, Cells, and Endocrinology, and has presented his research at national and international meetings, including the Society for the Study of Reproduction (SSR), the Texas Forum for Reproductive Sciences (TFRS), and the Gordon Research Conference on Mammalian Reproduction, where his poster received an outstanding Poster Award (2026).

Histochemical Society Statement

Histochemical and immunohistochemical approaches have been central to my research since graduate school, where I relied on immunofluorescence and confocal microscopy to resolve how specific regulators shape the decidualizing endometrial stromal cell. As a postdoctoral fellow, these techniques remain core to my work: I use immunohistochemistry and immunofluorescence to localize SLC40A1 and iron-handling machinery across the endometrium and to track how their expression changes in ferroptosis and endometriosis-associated infertility, pairing these spatial approaches with organoid models and mouse genetics to connect tissue-level structure to functional outcomes in fertility. I have seen firsthand how histochemistry bridges mechanistic cell biology and tissue-level physiology, and I value the Histochemical Society as a community that actively teaches and defends the principles of rigor, reproducibility, and careful interpretation of spatial data. If elected as a Council Member, I would bring the perspective of an early-career reproductive biologist to the Society's work: advocating for trainee-focused programming and mentorship, encouraging the adoption of multi-modal and spatial imaging methods within reproductive science, and helping recruit the next generation of histochemists from fields like mine where these tools are becoming increasingly essential. I am committed to supporting the Society's mission to advance histochemistry, promote its journal, and ensure new members find a welcoming, engaged home within HCS.