

## CURRICULUM VITAE

### Vsevolod Veniaminovich GUREVICH, Ph.D.

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**Place of birth:** Lvov, Ukraine (former USSR)  
**Nationality:** US citizen (naturalized)  
**Marital status:** Married, has a daughter

#### EDUCATION:

Moscow State University Moscow, Russia	B.S., M.S.	1980	Biology/Biochemistry
Masters Thesis Advisor: Prof. Dr. V. L. Voeikov. Shemyakin Institute of Bioorganic Chemistry Moscow, Russia	Ph.D.	1990	Bioorganic Chemistry
Ph. D. Thesis Advisor: Prof. Dr. V. M. Lipkin.			

#### PROFESSIONAL EXPERIENCE:

11/17 – present	Cornelius Vanderbilt Endowed Chair, Vanderbilt University, Nashville, TN
7/17 – present	Professor of Ophthalmology and Visual Sciences, Vanderbilt University, Nashville, TN
12/07 – present	Professor of Pharmacology, Vanderbilt University, Nashville, TN
10/01 – 12/07	Associate Professor of Pharmacology, Vanderbilt University, Nashville, TN
1/98 - 9/01	Head and Principal Scientist, Ralph and Muriel Roberts Laboratory for Vision Science, Sun Health Research Institute, Sun City, AZ
9/95 - 12/97	Staff Scientist, Sun Health Research Institute, Sun City, AZ
4/94 - 8/95	Research Associate, Department of Pharmacology, Thomas Jefferson University, Philadelphia, PA
6/91 - 3/94	Postdoctoral Fellow, Department of Pharmacology, Thomas Jefferson University, Philadelphia, PA (supervisor – Dr. Jeffrey L. Benovic)
12/83 - 5/91	Research Scientist, Division of Shemyakin Institute of Bioorganic Chemistry, Pushchino, Moscow Region, Russia
9/80 - 11/83	Graduate Research, Shemyakin Institute of Bioorganic Chemistry, Moscow, Russia
9/78 – 8/80	Undergraduate research, Moscow State University, Moscow, Russia

#### OTHER PROFESSIONAL ACTIVITIES:

Fonds National Suisse (Swiss National Science Foundation) (SNF) grant reviewer (November 2018)  
Session organizer and moderator, XXIII Biennial Meeting of the International Society for Eye Research, Belfast, Northern Ireland, UK (September 9-13, 2018).  
Session moderator, ARVO annual meeting 2018, Honolulu, Hawaii, April 29-May 4 (2018).  
Fonds National Suisse (Swiss National Science Foundation) (SNF) grant reviewer (May 2018)  
Austrian Science Fund (FWF) grant reviewer (April 2018)

NIH Special Emphasis Panel/Scientific Review Group NIH Transformative Research Awards 05 ZRG1 BCMB-A (51) R (April 2018)  
 NIH ZRG1 CB-P(55) (MIRA grants review) (November 2017)  
 NIH ZRG1 CB-W(55) (MIRA grants review) (November 2017)  
 NIH MIST study section (June 2017).  
 Member of the organizing committee, International Conference on Toxicology and Clinical Pharmacology, December 14-16, 2017 (Rome, Italy)  
 Netherlands Organization for Scientific Research (NWO) Chemical Sciences. Veni application reviewer (March 2017)  
 Wellcome Trust/DBT India Alliance grant reviewer (January 2017)  
 Marsden Fund (New Zealand) proposal reviewer (July 2016)  
 Indiana Diabetes Research Center (IDRC) Pilot & Feasibility grant reviewer (May 2016)  
 Agence Nationale de la Recherche (ANR, France) pre-proposal reviewer (November-December, 2015)  
 Member of the organizing committee, International Conference on Synthetic Biology, Houston, TX (September 28-29, 2015)  
 Marsden Fund (New Zealand) proposal reviewer (September 2015)  
 NIH BVS study section (June 2015)  
 Session Moderator, 2<sup>nd</sup> GPCR Targeted Screening, Berlin, Germany, May 7-8, 2015.  
 French National Research Agency (ANR) – MEMOARE project reviewer (May 2015)  
 NIH 2015/05 ZRG1 CBR 02M Special emphasis panel (March 2015; Chair)  
 NIH 2015/05 TAG Therapeutic Approaches to Genetic Diseases Study Section (March 2015)  
 NIH, 2015/05 ZRG1 GGG-Q (50) R PAR Panel: Innovative Therapies and Tools for Screenable Disorders in Newborns (March 2015)  
 Netherlands Organization for Scientific Research (NWO) Chemical Sciences. Veni application reviewer (March 2015)  
 Scientific Advisory Board member and Session Chair for 2<sup>nd</sup> GPCR screening meeting, May 7-8, 2015, Berlin, Germany (December 2014 – May 2015).  
 NIH, 2015/01 ZRG1 TAG-Q (01) Q Therapeutic Approaches to Genetic Diseases (October 2014)  
 NIH, 2015/01 ZGM1 TWD-6 (SC) Peer Review of Support of Competitive Research (SCORE) Grant Applications (November 2014)  
 Research Foundation Flanders (Fonds Wetenschappelijk Onderzoek - Vlaanderen, FWO), Pegasus – Short application reviewer (2014).  
 Scientific Advisory Board member and Session Chair for GPCR screening meeting, May 22-23, 2014, Boston (December 2013 – May 2014).  
 NIH, ZDA1 SXC-E 10 S, CEBRA: Cutting-Edge Basic Research Awards (R21) Study Section (December 2013).  
 NSF, CAREER program, Neural System Cluster proposal reviewer (November 2013).  
 NIH, Therapeutic Approaches to Genetic Diseases TAG/ ZRG1 GGG Q 50 Study Section (November 2013).  
 Research Foundation Flanders (Fonds Wetenschappelijk Onderzoek - Vlaanderen, FWO) Project Award Reviewer (2013)  
 Session moderator, annual meeting of the Association for Research in Vision and Ophthalmology, Seattle, WA (Symposium Architecture of the Eye: Structural Biology and Vision, May 5, 2013).  
 NIH, BVS study section (February 11-12, 2013)  
 NIH, HLBP 1, program project reviewer (February 5, 2013)  
 Science Foundation Ireland (Fonduireacht Eolaíochta Eireann) Project Award Reviewer (2012)  
 FNP (Fundacja na rzecz Nauki Polskiej), Poland, TEAM project reviewer (2012)  
 Session Chair, 15<sup>th</sup> International Conference on Retinal Proteins, Monte Verita, Ascona, Switzerland, September 29 - October 5, 2012.  
 Session moderator, annual meeting of the Association for Research in Vision and Ophthalmology, Ft Lauderdale, FL (2000, 2003, 2009, 2012).

French National Research Agency (l'Agence Nationale de la Recherche (ANR)) proposal reviewer (2010)  
 Session Chair, Track 1 - Basic Research in Neuroscience, Neurotalk-2010, Singapore, June 25, 2010.  
 NIH, ZRG1 CB-N58 Challenge grants reviewer (2009)  
 NIH, ZRG1 CB-G96 reviewer (2009)  
 NSF ad hoc proposal reviewer (2003, 2004, 2005, 2006, 2008, 2009)  
 Arizona Disease Control Research Commission, National Peer Review Panel Member (2005, 2006, 2008, 2009; 2014)  
 NIH, BDPE study section ad hoc reviewer (2008).  
 NIH, ZRG1 CB-G90 Retinopathy Studies panel reviewer (2007, 2008, 2009, 2010)  
 NIH, ZDA1 MXS-M (31) - National Institute on Drug Abuse Special Emphasis Panel reviewer (2007)  
 NIH, ZRG1 F05 study section reviewer (NRSA Fellowships in Cell Biology and Development) (2005, 2007, 2008)  
 Austrian Science Fund (FWF - Fonds zur Förderung der Wissenschaftlichen Forschung *Biologie & Medizin*) proposal reviewer (2006)  
 NIH, BDPE study section reviewer (2005).  
 Science Foundation Ireland (Fonduireacht Eolaíochta Eireann), SFI Fellow Award Reviewer (2005)  
 NSF Signal Transduction panel member (2004)  
 NIH, SSS-U(03) Special Emphasis Panel reviewer (2004)  
 NIH, NCI ZCA1 Special Emphasis Panel reviewer (2003)  
 NIH, Visual C study section reviewer (2001, 2002, 2003).  
 NIH, NHLBI program project reviewer (2001)

Reviewer:

*Nature*

*Nature Structural & Molecular Biology*

*Nature Chemical Biology*

*Developmental Cell*

*Molecular Cell*

*Trends in Biochemical Sciences*

*Trends in Neurosciences*

*Trends in Pharmacological Sciences*

*Proceedings of the National Academy of Sciences USA*

*EMBO Journal*

*Nature nanotechnology*

*FASEB Journal*

*Molecular Biology of the Cell*

*Journal of Neuroscience*

*EMBO Reports*

*Science Signaling*

*Journal of Cell Biology*

*Scientific Reports*

*Angewandte Chemie*

*Oncogene*

*Neuropsychopharmacology*

*Journal of Biological Chemistry*

*Nature Communications*

*The Journal of Pharmacology and Experimental Therapeutics*

*Acta Pharmaceutica Sinica B*

*Immunology and Cell Biology*

*Cell Proliferation*

*PLoS One*  
*British Journal of Pharmacology*  
*Experimental and Molecular Pathology*  
*Pharmacology Reviews*  
*Molecular Pharmacology*  
*Biochemistry*  
*Biochemical Journal*  
*Journal of Neurochemistry*  
*Molecular Endocrinology*  
*FEBS Journal*  
*Investigative Ophthalmology and Visual Science*  
*Vision Research*  
*Gene*  
*Expert Opinion on Therapeutic Targets*  
*Ageing Research Reviews*  
*Cell Biology International*  
*Microvascular Research*  
*Advances in Pharmacology*  
*British Journal of Cancer*  
*Neurochemistry International*  
*Molecular Immunology*  
*European Journal of Medicinal Chemistry*  
*Cells*  
*Molecular Dynamics*  
*Frontiers in Molecular Neuroscience*  
*Biotechnology Progress*  
*Journal of Receptors and Signal Transduction*  
*Frontiers in Experimental Pharmacology and Drug Discovery*  
*Frontiers in Molecular and Structural Endocrinology*  
*International Journal of Cancer*  
*Technology in Cancer Research and Treatment*  
*Journal of Proteomics & Bioinformatics*  
*Molecular Cancer*  
*BMC Evolutionary Biology*  
*Molecular Cancer Research*  
*Experimental Cell Research*  
*Current Molecular Pharmacology*  
*Molecules*  
*Pesticide Biochemistry and Physiology*  
*Ophthalmic Research*  
*Journal of Basic and Clinical Physiology and Pharmacology*  
*Photochemistry and Photobiology*  
*Archives of Biochemistry and Biophysics*  
*Experimental Eye Research*  
*Cell Biochemistry and Biophysics*  
*Cell Communication and Signaling*  
*Molecular Vision*  
*Immunological Investigations*  
*Computational and Structural Biotechnology Journal*  
*World Journal of Cardiology*  
*World Journal of Gastroenterology*

*International Journal of Molecular Sciences*  
*Current Biotechnology*  
*BMC Research Notes*  
*BMC Cell Biology*  
*Advances in Biological Chemistry*  
*Regulatory Peptides*  
*Traffic*  
*International Journal of Neuropsychopharmacology*  
*BBA Biomembranes*  
*Research on Diabetes*  
*Journal of Computer-Aided Molecular Design*  
*Receptor*  
*Sensors*

### **EDITORIAL BOARDS**

Journal of Biological Chemistry (Assistant Editor, 2006 – 2011; 2015-2017)  
 World Journal of Biological Chemistry (Editorial Board member, 2009-present; Editor-in-Chief, 2018-present)  
 Frontiers in Pharmacology (Associate Editor, 2010-present)  
 Science Open (Editorial Board member, 2013-present)  
 Genes and Diseases (Editorial Board member, 2013-present)  
 Frontiers in Neuroscience (Editorial Board member, 2016-present)  
 Frontiers in Molecular Neuroscience (Associate Editor, March 2018 – present)

### **HONORS AND AWARDS:**

1980 - Graduated *summa cum laude*  
 2004, 2005, 2011 – Teacher of the Year Award (student-awarded, “With special recognition for excellence in lecturing and willing assistance in the design and execution of experiments”), Department of Pharmacology, Vanderbilt University  
 2017 - Cornelius Vanderbilt Endowed Chair in the Basic Sciences of the School of Medicine

### **PROFESSIONAL AFFILIATIONS**

Association for Research in Vision and Ophthalmology  
 American Society for Biochemistry and Molecular Biology  
 American Chemical Society

### **TEACHING ACTIVITIES**

DIRECTOR OF GRADUATE STUDIES, Department of Pharmacology, 2011-2014.  
 ASSOCIATE DIRECTOR OF GRADUATE STUDIES, Department of Pharmacology, 2005-2011.

### **GRADUATE COURSES**

Membrane proteins structure and function (2016, 2017, 2018)  
 IGP Receptor theory and signal transduction (2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018)  
 Enzyme kinetics and receptor theory (2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018)  
 Bioregulation (cell signaling) (2018)  
 Receptor theory and GPCR signaling (October 8-12, 2012; Leipzig University, Germany)  
 Psychotropic drugs (2003)  
 Quantitative Reasoning (2005)

### **MEDICAL SCHOOL COURSES**

Key concepts in Pharmacology and Receptor theory for physicians. In: Human Blueprint and Architecture (August 2013)

Introduction to Concepts in Pharmacology: Receptor Thinking for Physicians. In: Diseases, Drugs, and Targets (March 2013)

#### COMMITTEES

Committee on the Status of Women in Vanderbilt Basic Sciences (2018-present)

IGP Admissions Committee (2005-2011)

Department of Pharmacology Qualifying Examination Committee (2005-2006, Chair; 2010-2011, Chair)

Neuroscience Qualifying Examination Committee (December 2005; William Walker)(Defended his thesis 3/17/2008)

Neuroscience Qualifying Examination Committee (September 2010; Gloria Naa Atswei Laryea)(Defended her thesis 7/17/2014)

Neuroscience Qualifying Examination Committee (September 2011; Nicholas Ward)

Biochemistry Qualifying Examination Committee (October 2011; Lund, Evan Gordon)

Cell and Developmental Biology Qualifying Exam Committee (November 2011-January 2012; Holmes (Rohweder), Noelle Kristine)

Molecular Physiology and Biophysics Qualifying Exam Committee (March 11, 2014; Capozzi, Megan Elise)

Neuroscience Phase I examination committee (July 28, 2014; Alyssa Dawn Lokits)(Defended her thesis on 5/1/2017)

Biological Sciences Honors Committee (April 21, 2015; Regina Jiweon Lee; recommended for Honors)

Neuroscience Honors Thesis committee (April 23, 2015; King, Elizabeth Ann; recommended for High Honors)

#### JUNIOR FACULTY MENTORING COMMITTEES

- Benjamin W. Spiller, Assistant Professor of Pharmacology (2009-2015). Dr. Spiller was promoted to Associate Professor of Pharmacology with tenure.
- Ana Marin Dias Carneiro, Assistant Professor of Pharmacology (2010-present)

#### UNDERGRADUATE STUDENTS' RESEARCH SUPERVISED

(\* - research resulted in publication(s) where the student or trainee is a co-author)

- \* Paz, Cherlton L. (1998-1999)
- \* Climaco, Gregory C. (1999-2000) MD/PhD from Washington University, St Louis, MO. Currently practicing medicine in Alamogordo, NM
- \* Velez, Maria-Gabriela (1999-2001) Recipient of NIH MARC award (2001-2002). 2001-2002 - an intern at Mayo Clinic, Rochester, MO. MD-PhD student at the University of Colorado, Denver (Defended her thesis in March, 2008). Currently resident, Stanford University, CA
- Olander, Lisa (2000-2001)
- Liles, Rebecca (2000-2001)
- \* Gurevich, Yulia V. (2000-2001)
- Harris, Jana E. (2001) Subsequently obtained her Ph.D. at Vanderbilt University.
- Amundson, Claire M. (2003)
- Frederick, Elaine Courtney (IMSD Post Baccalaureate student, 2003-2004). Subsequently obtained PhD at Brown University.
- McMillan, David H. (2004)
- Ooms, Laura Sue (2005)
- Cheng, Frances Yun (2006-2007) (subsequently - MD-PhD student at Vanderbilt University)
- Boyd, Hayley Elizabeth (June-August 2008)(summer internship; 2008-present, PhD student at Vanderbilt University)

- Tavakalov, Ruben (June 2009 – 2010)(summer internship; then volunteer)
- \* Nagel, Stefanie (June-August 2010; summer internship as a part of Master's program at Leipzig University, Germany) (married last name: Babilon). Subsequently obtained PhD at Leipzig University.
- \*Tsakem, Elviche L. (Research Assistant in the lab, January 2010 - August 2011)
- Richter, Konstantin (June-August 2011; summer intern from Leipzig University)
- Colon, Jonotan (Research Assistant in the lab, August 2011- May 2013)
- \*Hong, Yuan (October 2011 – April 2012; intern)
- \*Perez, Alejandro (January 2012-2013; EMPHASIS student). Subsequently obtained Md at Vanderbilt
- \*Kristen Rose Findley (August 2012 – May 2013; Biomedical Engineering senior at Vanderbilt; volunteer)
- William Moore Wigle (January - May 2013; Neuroscience junior at Vanderbilt; trainee in NSC 292a)
- Paige Elizabeth Massey (January – December 2013; Neuroscience junior at Vanderbilt; trainee in NSC 292a, NSC 292b)
- \*Regina Jiweon Lee (January 2013-May 2015; Molecular and Cellular Biology major at Vanderbilt; volunteer; for May-August 2013 - Irene & Eric Simon Brain Research Foundation Summer Fellow; defended her honors thesis April 21, 2015; 2015-2017 a post-bac at NIH; currently a student at the University of Indiana School of Medicine)
- \*Jack Vincent Slagis, (February 2013-2014; Biology major at Vanderbilt; volunteer)
- Nebiyat Zewdie (June-August 2013, Biological Sciences major, University of Maryland, Baltimore County; ASPET summer scholar).
- Denis Hüwel (July-October 2013; DAAD RISE worldwide summer scholar from Ludwig-Maximilians-Universität München, Germany).
- \*Henriette Stoy (August-October 2013; DAAD RISE worldwide summer scholar from Eberhard Karls Universität Tübingen, Germany; September-December 2014, volunteer in the lab).
- Jacqueline E. Harris (June-July 2014, UCRIP student from College of Sciences at Georgia Tech; Biochemistry, Pre-Medicine Major).
- Georg Vucak (July-October, 2014; February-March 2015; Master's student at the University of Graz, Austria)
- Ulrike Kinkel (July-October, 2014; summer internship as a part of Master's program at Leipzig University, Germany)
- \*Andreas Franz (August-October 2014; DAAD RISE worldwide summer scholar from Freie Universität Berlin, Germany)
- Aline Jede (August-October 2014; DAAD RISE worldwide summer scholar from Technische Universität Dresden, Germany)
- Muhammad Suhaib Mahmood (January-May 2015; Pre-Medicine Major at Vanderbilt, volunteer)
- \*Prokop, Susanne Clara (June-August 2015) (Vanderbilt International Summer Short-term Fellow; medical student at Semmelweis University, Budapest, Hungary)
- Samihah Islam (May - October 2015; Neuroscience major at Vanderbilt; volunteer)
- \*Xu, Qiuyi (Pam) (June – October 2015; Molecular and Cellular Biology major at Vanderbilt; volunteer)
- Tobias Hänsch (June-August 2015) Summer student from Leipzig University, Germany, supported by Max Kade Foundation.

- \*Jonas Tholen (July-December 2015; DAAD RISE worldwide summer scholar from University of Applied Sciences Emden-Leer, Emden, Germany)
- Ariana Rauch (August-October 2015) DAAD RISE worldwide summer scholar from Freie Universität Berlin, Germany.
- Jakob Gasse (July-September 2016). Summer exchange Masters student from Leipzig University, Germany, supported by Max Kade Foundation.
- Anastasia Lendel (January-May 2017). Vanderbilt undergrad. Volunteer in the lab.
- Reema Shirole (March-June 2017). Volunteer.
- Bianca Balzasch (July-October 2017). DAAD RISE worldwide summer scholar from Heidelberg Universität, Germany
- Evi Juelke (July-October 2017). Summer student from Leipzig University, Germany, supported by Max Kade Foundation.
- Luwi J. Shamambo (August 2017 – June 2018). Vanderbilt undergrad. Volunteer in the lab.
- Mariana Lopes dos Santos (May-June 2018) – observer in the lab. Biomedicine student at the Federal University of Health Sciences of Porto Alegre (UFCSPA) (Brazil).
- Elizabeth Huh (October 2018 – present). Vanderbilt undergrad. Volunteer in the lab.
- Preethi Karnam (January 2019 – present). Vanderbilt undergrad. Volunteer in the lab.
- Aashvi Patel (January 2019 – present). Vanderbilt undergrad. Volunteer in the lab.

#### **GRADUATE STUDENTS SUPERVISED**

(\* - research resulted in publication(s) where the student is a co-author; \*\* - 5 or more publications: \*\*\* - 10 or more publications)

- Brad Grueter (January-March, 2002) (rotation)
- Choya Yoon (September-October 2002) (rotation)
- \*\*\*Susan Marie Hanson (Ph.D. student in the lab March 2002-August 2005). Defended her thesis 8/30/2005. Currently Assistant Professor in Health and Medicine, Carroll University.
- Todd Andrew Townsend (October-December 2003) (rotation)
- Ipshita Chakraborty (September-October 2004) (rotation)
- Sylvain Le Marchand (September-December 2004) (rotation)
- Blount, Anthony Craig (September – December 2004) (independent study: structure and function of arrestin proteins)
- Xianfei Sun (March-May 2005)(rotation)
- Paige Elizabeth Selvy (March-May 2006)(rotation)
- \*\*Whitney Marie Cleghorn (PhD student in the lab March 2006-June 2012). Defended her thesis June 8, 2012. Post-doc at the University of Washington (Dr. J. Hurley lab), 2012-2017; since 2017 – Assistant Professor, University of Puget Sound, WA.
- Kari Myers (September-October 2006)(rotation)
- \*Sergio Coffa (PhD student in the lab April 2007 – July 2011). Defended his thesis July 27, 2011. Post-doc at Virginia Commonwealth University, August 2011-February 2012. Pharmacology Patent Examiner at the United States Patent and Trademark Office (USPTO), February 2012-present).
- Ketron, Adam Christopher (August-October 2007)(rotation)
- \*Lenou (Tsakem), Elviche Luclece (August 2009 – August 2011) (transferred to UT Southwestern, Dallas, TX, for family reasons)
- Couch, Frank Benjamin (Jami) (September-October 2009) (rotation)
- Zurawski, Zack P (November-December 2009) (rotation)



- Sandra Berndt (February-April 2011) (exchange graduate student from Leipzig University, Germany)
- \*Palazzo, Maria Christine (January-August 2011) (rotation)
- \*\*\*Chen, Qiuyan (2010-2015) (graduate student in the lab; co-mentored with Dr. T. M. Iverson). Defended her thesis October 1, 2015. Currently a post-doc at the University of Michigan, Ann Arbor; moved in August 2017 with her PI Dr. Tesmer to Purdue University.
- \*Lizama, Britney Nola (September-October 2012)(rotation)
- Oliver, Kendra Helen (November-December 2012)(rotation)
- \*Wanka, Lizzy (September-November 2013) (exchange graduate student from Leipzig University, Germany)
- Carrington, Sheridan Jared Seku (January-February 2014)(rotation)
- \*\*Perry, Nicole Anne (Nicki) (January-February 2015)(rotation) (May 2015 – present, graduate student in the lab; co-mentored with Dr. T. M. Iverson)
- Marcus, David J (January-February 2015)(rotation)
- Marlow, Brennica (November-December 2015)(rotation)
- Justin T. Marinko (January-February 2016)(rotation)
- \*Indrischek, Henrike (May-August 2016) (exchange graduate student from Leipzig University, Germany)
- Sebastian, Melaine (September-October 2017)(rotation)
- Stubbs, Haley (January-February 2018)(rotation)

#### **STUDENT MASTERS COMMITTEES**

- Sliwoski, Gregory Richard (Pharmacology)(January-July 2012). Defended July 2012. Then PhD student at Leipzig University (Germany). Defended PhD thesis in 2015.
- Lund, Evan Gordon (Biochemistry)(2011-2013). Defended January 2014.

#### **STUDENT Ph.D. COMMITTEES**

- Henage, Lee (Pharmacology)(Chair; 2002-2006). Defended his thesis on 1/11/2006.
- Hanson, Susan Marie (Pharmacology)(Mentor; 2002-2005). Defended her thesis on 8/30/2005.
- Rula, Elizabeth Young (Pharmacology)(2003-2008). Defended her thesis on 8/11/2008.
- Oldham, William Michael (Pharmacology)(Chair; 2004-2006). Defended his thesis on 6/08/2006.
- Manderfield, Lauren June (Pharmacology)(Chair; 2004-2008). Defended her thesis on 9/03/2008.
- Voss, Bryan Martin (Pharmacology)(2004-2007). Defended his thesis on 6/26/2007.
- Townsend, Todd Andrew (Pharmacology)(2005-2008). Defended his thesis on 3/27/08.
- Walker, William (Neuroscience)(Chair; 2005-2008). Defended his thesis 3/17/2008.
- Misra, Sunita N (Pharmacology)(2005-2008). Defended her thesis 6/9/2008.
- Nordstrom, Sarah Melissa (Pharmacology)(Chair; 2005-2007). Defended her thesis on 12/12/2007.
- Gustin, Richard Michael (Pharmacology)(Chair; 2006-2010). Defended his thesis on 6/15/2010.
- Cleghorn, Whitney Marie (Pharmacology)(Mentor; 2006-2012). Defended her thesis June 8, 2012.
- Mazalouskas, Matthew David (Pharmacology)(Chair, 2007-2014). Defended his thesis on 3/7/2014.
- Selvy, Paige Elizabeth (Pharmacology)(2007-2011). Defended her thesis on 10/28/2011.
- Coffa, Sergio (Pharmacology)(Mentor; 2007-2011). Defended his thesis on 7/27/2011.
- Swan, Christina Elizabeth (Pharmacology)(2007-2012). Defended her thesis on 8/16/2012.
- Watkins, Guy Richard (Pharmacology)(2008-2012). Defended his thesis on 7/30/2012.
- Lian, Na (Pharmacology)(Chair; 2008-2010). Defended her thesis on 12/09/2010.

- Pitts, Ronald Jason (Biological Sciences)(2008-2011). Defended his thesis on 4/01/2011.
- Bridges, Thomas Miller (Pharmacology)(Chair; 2008-2010). Defended his thesis on 8/17/2010.
- Downey, Jason Duane (Pharmacology)(Chair; 2008-2012). Defended his thesis on 11/6/2012.
- Thaker, Tarjani Mahesh (Biochemistry)(2009-2013). Defended her thesis on 8/23/2013.
- LeNoue-Newton, Michele Laura (Pharmacology)(2009-2015). Defended her thesis on 8/23/2013
- Anderson, Lyndsey Leigh (Pharmacology)(Chair; 2010-2014). Defended her thesis on 11/12/2015.
- Yin, Shen (Pharmacology)(Chair; 2010-2013). Defended her thesis on 9/23/2013.
- Ho, Karen (Pharmacology)(2012-2014). Defended her thesis on 8/18/2014.
- Chen, Qiuyan (Pharmacology)(Co-mentor with Tina Iverson; 2011-2015). Defended her thesis on 10/1/2015.
- Colin James Stockdale Klaus (Mathematics)(2013-2017). Defended his thesis on 8/23/2017.
- Savage, Sara Renee (Pharmacology)(2013-2015). Defended her thesis on 8/21/2015.
- Dar'ya S. Redka (University of Toronto School of graduate studies, Canada). Member of final oral examination committee for the Degree of Doctor of Philosophy, Toronto, Canada, May 15, 2014. (Successfully defended her thesis and passed oral exam on May 15, 2014).
- Mai, Tu Hoang (Pharmacology). Member of the thesis committee for defense and final exam, May 30, 2014.
- Babilon, Stefanie (Leipzig University, Germany). Second examiner and evaluator of PhD thesis (June-July, 2014).
- Jinnah, Hussain (Pharmacology) (Chair; 2014-present)
- Lokits, Alyssa Dawn (Neuroscience) (Chair; 2014-2017). Defended her thesis on 5/1/2017.
- Oliver, Kendra Helen (Pharmacology) (2015-2016). Defended her thesis on 7/28/2016.
- Sliwoski, Gregory Richard (Leipzig University, Germany). Evaluator of PhD thesis (November 2015).
- Bender, Brian (Pharmacology) (Chair; 2015-2018). Defended his thesis November 1, 2018.
- Perry, Nicole Anne (Pharmacology) (Co-Mentor; November 2016 – present)
- Saurabh Pandey (Indian Institute of Science Education and Research (IISER) Mohali, Punjab, India). External evaluator of PhD thesis (March-April, 2017).
- Mario Schubert (Leipzig University, Germany). Evaluator of PhD thesis (April 2018).

#### **POSTDOCTORAL FELLOWS SUPERVISED**

(\* - research resulted in publication(s) where the post-doc is a co-author; \*\* - 5 or more publications; \*\*\* - 10 or more publications)

- \*\*\*Sergey A. Vishnivetskiy (1997-2004). Currently Research Instructor at Vanderbilt University.
- \*Ling Pan (1999-2002). Married name – Ling Pyktel. Currently CEO of Turning Technologies, Shanghai, PRC.
- \*Elena Kolobova (2002-2005)
- \*Dayanidhi Raman (2003-2006). Currently Assistant Professor at the University of Toledo.
- \*\*\*Susan Hanson (2005 – 2006). Currently Assistant Professor at Carroll University.
- \*\*\*Xiufeng Song (2004-2009). (Moved for family reasons to a Postdoctoral fellow position at Massachusetts General Hospital/Harvard Medical School).
- \*\*\*Seunghui Kook (2004-2014). Currently Research Instructor, Vanderbilt.
- \*\*\*Xuanzhi Zhan (2008-2014). Currently Assistant Professor of Chemistry, Tennessee Tech University, Cookeville, TN.
- \*\*\*Luis Eduardo Diaz Gimenez (2008-2014).

- \*Jungwon Seo (2009-2010). Currently Assistant Professor at Wonkwang University, Korea
- \*Maya Breitman (2010-2011) (Moved for family reasons; became Research Instructor at ETSU, Johnson City, TN; currently Instructor, CWRU School of Medicine, Cleveland, OH).
- \*\*Faiza Baameur (2012-2013). Currently post-doc at MD Andersen Center, Houston, TX.
- \*Sandra Berndt (June 2015-present).
- \*\*\*Qiuyan Chen (October 2015 – May 2016; mini post-doc in the lab to finish projects started during graduate career; moved to post-doctoral position at the Lab of J. G. Tesmer, University of Michigan, June 1, 2016).
- Chen Zheng (August 2016 – present)
- Deepak Balasubramanian (July 2017 – July 2018)
- Jeffery Dunning (August 2017 – present)
- \*Srimal Samaranayake (September 2017 – present)

### LAB GRADUATES – FACULTY OR EQUIVALENT

- Susan Marie Hanson – Assistant Professor in Health and Medicine, Carroll University, Waukesha, WI (2009 -present)
- Ling Pan (1999-2002). Married name – Ling Pyktel. Currently CEO of Turning Technologies, Shanghai, PRC.
- Dayanidhi Raman - Research Assistant Professor at the Department of Cancer Biology, Vanderbilt University (2007-2015). Assistant Professor, University of Toledo (2015 - present).
- Jungwon Seo - Assistant Professor at Wonkwang University, Korea (February 2011 – present)
- Sergio Coffa - Pharmacology Patent Examiner at the United States Patent and Trademark Office (USPTO)
- Xuanzhi Zhan – Assistant Professor of Chemistry, Tennessee Tech University, Cookeville, TN (August 2014 – present)
- Whitney Marie Cleghorn – Assistant Professor, University of Puget Sound, WA (October 2017 – present)

### TRAINEE AWARDS:

#### Susan Marie Hanson, graduate student

2002 – Pharmacology Retreat Talk, 1<sup>st</sup> place

#### Whitney Marie Cleghorn, graduate student:

2007 - Pharmacology Retreat Talk, 2<sup>nd</sup> place

2007 – ASBMB travel award

2011 – Richard Newton Lolley travel award from The ARVO Foundation for Eye Research

2011 – FASEB travel award

#### Xiufeng Song, Post-Doctoral Fellow:

2008 – ASBMB travel award

2008 – Richard Newton Lolley travel award from The ARVO Foundation for Eye Research

#### Luis Eduardo Gimenez, Post-Doctoral Fellow:

2010 – ASBMB travel award

2011 – Keystone Meeting travel award

#### Seunghyi Kook, Post-Doctoral Fellow:

2010 – ASBMB travel award

#### Qiuyan Chen, graduate student:

2011-12 – Vanderbilt International Scholar Program grant award (covers full year of tuition and stipend)

2011 – Travel award for GPCR Workshop Dec 4-8, 2011, Maui, Hawaii

2011 - Pharmacology Retreat Talk, 2<sup>nd</sup> place  
 2011 - Pharmacology Graduate Training Dissertation Enhancement Grant  
 2016 - The Anne Karpay Award in Structural Biology.

Xuanzhi Zhan, Post-Doctoral Fellow:

2013 – ASBMB travel award

Regina Jiweon Lee, undergraduate intern:

2013 - Irene & Eric Simon Brain Research Foundation Summer Fellow Award

Lizzy Wanka, exchange graduate student from Leipzig University

2013 - Exchange fellowship award from Vanderbilt-Leipzig University collaboration.

Sergey A. Vishnivetskiy, Research Instructor

Session moderator, annual meeting of the Association for Research in Vision and Ophthalmology, Orlando, FL (Symposium Phototransduction, May 6, 2014).

Nicole A. Perry, graduate student:

2018-2019 – American Heart Association Individual pre-doctoral fellowship 18PRE34030017.

2015 - Pharmacology Retreat Talk, 2<sup>nd</sup> place

2016-2018 – American Heart Association Individual pre-doctoral fellowship 16PRE30180007.

2017 – Philanthropic Educational Organization (PEO) Women in Science award

2017 – Lee Limbird dissertation enhancement grant (VU Pharmacology)

2017 – 1<sup>st</sup> place, graduate student talk at the Vanderbilt Institute of Chemical Biology retreat

2018 – Lai Sulin Scholarship

2018 – Dean’s Award for Exceptional Achievement

Henrike Indrischek, exchange graduate student from Leipzig University

2016 - Exchange fellowship award from Vanderbilt-Leipzig University collaboration.

**UNIVERSITY SERVICE:**

Structural Biology Search Committee (Dept. of Pharmacology, 2004)

Molecular Neuroscience Qualifying Exam Committee (2004)

Earl W. Sutherland, Jr. Lecture Planning Committee for 2005

Pharmacology Qualifying Exam Committee (2005-2006; 2010-2011)

Admissions Committee, Interdisciplinary Graduate Program in the Biological Sciences (2005-2011)

Vanderbilt University Medical Center Basic Science Planning Committee (2007-2008)

Inter-Departmental Graduate Program Internal Review Committee (2009)

Cell Signaling Search Committee (Dept. of Pharmacology, 2009-11)

Pharmacology Graduate Program Training Advisory Group (2010-2014)

Steering Committee, Interdisciplinary Graduate Program (2011-2014)

Vanderbilt University School of Medicine Faculty Appointments and Promotions Committee (2011-2013)

Vanderbilt University Graduate Faculty Council (2011- 2016)

Vanderbilt School of Medicine internal grant review committee (2011, 2012)

Vanderbilt School of Medicine bridge funding review committees for faculty members (2011, 2012, 2013)

Quarterly Basic Science Education Group (2011- 2014).

The Potocsnak Family Discovery Grant in Regenerative Visual Neuroscience at the Vanderbilt Eye Institute reviewer (2013).

Poster judge for the 2014 VUMC Postdoctoral Research and Shared Resources Symposium (April 2014).

Poster judge for the 2015 VUMC Postdoctoral Research and Shared Resources Symposium (April 28, 2015).

Poster judge for the 2016 VUMC Postdoctoral Research and Shared Resources Symposium (April 29,

2016).

Poster judge for the 2017 Vanderbilt Postdoctoral Research and Shared Resources Symposium (April 19, 2017).

Poster judge for the 2018 Vanderbilt Postdoctoral Research and Shared Resources Symposium (April 12, 2018).

VEI internal grant reviewer – April 2017.

VICTR studio grant review (basic science) – September 2017.

WVBS Committee (October 2017 – present)

## **FINANCIAL RESOURCES (GRANTS AND CONTRACTS)**

### **CURRENT GRANTS**

#### **NIH Research Grant RO1 EY011500**

Project Title: Structure-function studies of visual arrestin

PI: V.V. Gurevich

Direct costs from 04/01/97 through 3/31/01: \$484,483.

Direct costs from 04/01/01 through 3/31/05: \$175,000 per annum.

Direct costs for the period 4/1/05-7/31/09: \$335,584; \$345,652; \$356,021; \$366,702.

Direct costs for the period 8/1/09-7/31/14: \$355,213; \$365,869; \$376,845; \$388,151; \$399,795.

Direct costs for the period 4/1/015-3/31/19: \$331,603 annually

#### **NIH Research grant (MIRA award) R35 GM122491**

(This grant merges GM077561 and GM109955)

Project Title: Targeted Engineering of Designer Arrestins to Regulate Cell Signaling

PI: V.V. Gurevich

Direct costs from 5/1/2017 to 4/30/2022: \$360,000 annually.

NIH Supplement 3 R35 GM122491-02S1 Funds to purchase stereotaxis. \$32,490.

1R21 DA043680-01 (co-PI with Iverson, T.M.) 04/01/2017-03/31/2019

NIH

Project Title: Mechanisms of signal bias in arrestins

Cornelius Vanderbilt Endowed Chair (Vanderbilt University)

\$100,000 annually from 2017

### **COMPLETED**

#### **NIH Research Grant RO1 GM077561**

Project Title: Arrestin interactions with non-receptor binding partners (became part of MIRA R35 GM122491 award)

Direct costs from 04/01/2007 through 03/31/2011: \$180,000 per annum

Direct costs from 04/01/2012 through 03/31/2016: \$182,051; \$163,172; \$163,172; \$163,172.

#### **NIH Research Grant RO1 GM109955**

Project Title: Regulation of GPCR signaling with receptor-specific arrestins (became part of MIRA R35 GM122491 award)

Direct costs (1/1/2015-12/31/2018): \$236,742 per annum (from 5/1/2017 merged into R35 GM122491)

#### **NIH Research Grant RO1 GM081756-01A1**

Project Title: Conformational regulation of arrestin-mediated signaling

Direct costs \$213,250 per annum from 7/1/2008 through 6/30/2012 (includes subcontract to MCW, \$50,000 direct plus \$25,750 indirect per annum)

#### **ARRA Research Supplement R01 GM081756-02S1**

Project Title: Conformational regulation of arrestin-mediated signaling

Direct costs \$180,000 per annum (2009-2010)

Supplement 3 R01 EY011500-08S1

PI: V.V. Gurevich

Project Title: Structure-function studies of visual arrestin (Equipment supplement).

Direct costs \$54,190 (2003-2004)

Supplement 3 RO1 GM077561-01S1

Project Title: Arrestin interactions with non-receptor binding partners (Equipment supplement).

Direct costs \$25,000 (2007)

NIH Research Grant RO1 GM63097: Molecular mechanisms of arrestin function.

PI: V.V. Gurevich

Direct costs from 04/01/01 through 3/31/05: \$166,000 per annum.

Vanderbilt Discovery Grant 1040659012

Project Title: Arrestin role in photoreceptor survival

Direct costs \$50,000 per annum (2006-2007)

## PATENTS

1. Zozulya, S.A., Shirokova, E.P., **Gurevich, V.V.**, Kharitonov, S.I., Udovichenko, I.P., Zvyaga, T.A., Natochin, M.Y., and Badalov, P.R. Recombinant plasmid DNA pTISP6, coding the synthesis of RNA polymerase from *Salmonella typhimurium* phage SP6, the method of its construction and *E. coli* strain, overproducing SP6 RNA polymerase. USSR patent No1547313 (01/11/89).
2. **Gurevich, V.V.**, Gurevich, E.V., Zhan, X. Vanderbilt University. Peptide regulators of JNK family kinases. US patent 15/892,853 (02/09/2018).

## PUBLICATIONS IN PEER-REVIEWED JOURNALS:

Total citations (from Google Scholar): >15,700; h-index: 67; i10 index: 171

(<https://scholar.google.com/citations?user=O7PY3eAAAAAJ&hl=en>)

1. Voeikov, V.L., and **Gurevich, V.V.** Effects of trypsin on the regulation of  $\beta$ -adrenergic receptor by guanyl nucleotides. *Bioorg. Khim. (Rus)* **8**: 533-541 (1982).
2. Voeikov, V.L., Vilenskaya, N.D., Lukashev, M.E., and **Gurevich, V.V.** Isolation of rat reticulocyte membranes containing guanyl nucleotide sensitive adenylate cyclase and  $\beta$ -adrenergic receptor. *Bioorg. Khim. (Rus)* **8**: 524-532 (1982).
3. Voeikov, V.L., and **Gurevich, V.V.** Separation of free and bound to solubilized  $\beta$ -adrenergic receptor [3H]dihydroalprenolol using cation exchange resin. *Bioorg. Khim. (Rus)* **9**: 628-632(1983).
4. Voeikov, V.L., **Gurevich, V.V.**, and Udovichenko, I.P. Isolation of the  $\beta$ -adrenergic receptor from bovine cerebellum. *Biol. Membr. (Rus)* **1**: 65-73 (1984).
5. Zozulya, S.A., **Gurevich, V.V.**, Shmukler, B.E., Natochin, M.Y., Zvyaga, T.A., Gryaznov, S.M., and Shirokova, E.P. Synthesis of visual rhodopsin in a cell-free translation system. I. The effect of the structure of the synthetic bovine opsin mRNA on its translational efficiency. *Bioorg. Khim. (Rus)* **14**: 1663-1670 (1988).
6. Natochin, Yu.V., Parnova, R.G., **Gurevich, V.V.**, Didina, S.E., Reznik, L.V., and Shakhmatova, E.I. Chemical composition of the haemolymph and ionic regulation in cells of the caterpillar *Pieris Brassicae*. *J of Evolutionary Biochem and Physiol (Rus)* **24**: 149-156 (1988).
7. **Gurevich, V.V.**, Zozulya, S.A., Zvyaga, T.A., Natochin, M.Y., Shirokova, E.P., Garnovskaya, M.N., Dumler, I.L., Shmukler, B.E., and Korotkova, N.V. Functional activity of visual rhodopsin expressed in vitro. *Biol Membr (Rus)* **6**: 647-649 (1989).
8. Zozulya, S.A., **Gurevich, V.V.**, Zvyaga, T.A., Dumler, I.L., Garnovskaya, M.N., Shmukler, B.E., Natochin, M.Y., Shirokova, E.P., and Badalov, P.R. *In vitro* synthesis of visual rhodopsin for a protein engineering study. *J. Prot. Chem.* **8**: 380-382 (1989).
9. **Gurevich, V.V.**, Zozulya, S.A., Shirokova, E.P., Zvyaga, T.A., Garnovskaya, M.N., Dumler, I.L., Badalov, P.R., Natochin, M.Y., Pokrovskaya, I.D., and Shmukler, B.E. Synthesis of visual rhodopsin in a

- cell-free translation system. II. Functional properties of recombinant rhodopsin and its mutant forms. *Bioorg. Khim. (Rus)* **16**: 303-308 (1990).
10. Zozulya, S.A., **Gurevich, V.V.**, Zvyaga, T.A., Shirokova, E.P., Dumler, I.L., Garnovskaya, M.N., Natochin, M.Y., Shmukler, B.E., and Badalov, P.R. Functional expression *in vitro* of bovine visual rhodopsin. *Protein Engineering* **5**: 453-458 (1990).
  11. **Gurevich, V.V.**, Zozulya, S.A., Zerf, E.P., Pokrovskaya, I.D., Obukhova, T.A., Garnovskaya, M.N., Dumler, I.L., and Rychkova, M.P. Visual rhodopsin: amino acid substitutions Asp83->Asn, and Glu 134->Gln prevent activation of cGMP phosphodiesterase. *Biomedical Science* **1**: 527-530 (1990).
  12. **Gurevich, V.V.**, Pokrovskaya, I.D., Garnovskaya, M.N., Dumler, I.D., and Zozulya, S.A. Proper cotranslational insertion of the visual rhodopsin into lipid bilayer occurs in the absence of protein translocation machinery. *Biomedical Science* **2**: 187-192 (1991).
  13. **Gurevich, V.V.**, Zozulya, S.A., Pokrovskaya, I.D., and Obukhova, T.A. Preparative *in vitro* mRNA synthesis using SP6 and T7 RNA polymerases. *Anal. Biochem.* **195**, 207-213 (1991).
  14. **Gurevich, V.V.**, and Benovic, J.L. Cell-free expression of visual arrestin: Truncation mutagenesis identifies multiple domains involved in rhodopsin interaction. *J.Biol.Chem.* **267**, 21919-21923 (1992).
  15. **Gurevich, V.V.**, and Benovic, J.L. Visual arrestin interaction with rhodopsin: Sequential multisite binding ensures strict selectivity towards light-activated phosphorylated rhodopsin. *J.Biol.Chem.* **268**, 11628-11638 (1993).
  16. Sterne-Marr, R., **Gurevich, V.V.**, Goldsmith, P., Bodine, R.C., Sanders, C.Y., Donoso, L.A., and Benovic, J.L. Polypeptide variants of  $\beta$ -arrestin and a novel arrestin family member. *J.Biol.Chem.* **268**, 15640-15648 (1993).
  17. **Gurevich, V.V.**, Richardson, R.M., Kim, C.M., Hosey, M.M., and Benovic, J.L. Binding of wild type and chimeric arrestins to the m2 muscarinic cholinergic receptor. *J.Biol.Chem.* **268**, 16879-16882 (1993).
  18. Krupnick, J.G., **Gurevich, V.V.**, Schepers, T., Hamm, H.E., and Benovic, J.L. Arrestin-rhodopsin interaction: Multi-site binding delineated by peptide inhibition. *J.Biol.Chem.* **269**, 3226-3232 (1994).
  19. **Gurevich, V.V.**, Chen, C.-Y., Kim, C.M., and Benovic, J.L. Visual arrestin binding to rhodopsin: Intramolecular interaction between the basic N-terminus and acidic C-terminus of arrestin may regulate binding selectivity. *J.Biol.Chem.* **269**, 8721-8727 (1994).
  20. Kunapuli, P., **Gurevich, V.V.**, and Benovic, J.L. Phospholipid-stimulated autophosphorylation activates the G protein-coupled receptor kinase GRK5. *J.Biol.Chem.* **269**, 10209-10212 (1994).
  21. Pokrovskaya, I.D., and **Gurevich, V.V.** *In vitro* transcription: preparative yields in analytical scale reactions. *Anal. Biochem.* **220**, 420-423 (1994).
  22. **Gurevich, V.V.**, Dion, S.B., Onorato, J.J., Ptasienski, J., Kim, C.M., Sterne-Marr, R., Hosey, M.M., and Benovic, J.L. Arrestin interactions with G protein-coupled receptors: Direct binding studies with rhodopsin,  $\beta_2$ -adrenergic, and m2 muscarinic cholinergic receptors. *J.Biol.Chem.* **270**, 720-731 (1995).
  23. **Gurevich, V.V.**, and Benovic, J.L. Visual arrestin binding to rhodopsin: Diverse functional roles of positively charged residues within the phosphorylation-recognition region of arrestin. *J.Biol.Chem.* **270**, 6010-6016 (1995).
  24. Goodman, O.B., Krupnick, J.G., Santini, F., **Gurevich, V.V.**, Penn, R.B., Gagnon, A.W., Keen, J.H., and Benovic, J.L.  $\beta$ -Arrestin functions as a clathrin adaptor to promote  $\beta_2$ -adrenergic receptor endocytosis. *Nature* **383**, 447-450 (1996).
  25. **Gurevich, V.V.**, and Benovic, J.L. Mechanism of phosphorylation-recognition by visual arrestin and its role in arrestin transition into high-affinity binding state. *Mol. Pharmacol.* **51**, 161-169 (1997).
  26. Goodman, O.B., Jr., Krupnick, J.G., **Gurevich V.V.**, Benovic, J.L., and Keen, J.H. Arrestin/Clathrin Interaction: localization of the arrestin binding locus to the clathrin terminal domain. *J. Biol. Chem.* **272**, 15017-15022 (1997).
  27. Gray-Keller, M.P., Detwiler, P.B., Benovic, J.L., and **Gurevich V.V.** Arrestin with a single amino acid substitution quenches light-activated rhodopsin in a phosphorylation-independent fashion. *Biochemistry* **36**, 7058-7063 (1997).

28. Krupnick, J.G., **Gurevich, V.V.**, and Benovic, J.L. Mechanism of Quenching of Phototransduction. Binding competition between arrestin and transducin for phosphorhodopsin. *J. Biol. Chem.* **272**, 18125-18131 (1997).
29. Pals-Rylaarsdam, R., **Gurevich, V.V.**, Lee, K.B., Ptasienski, J.A., Benovic, J.L., and Hosey, M.M. Internalization of the m2 Muscarinic Acetylcholine Receptor: Arrestin-independent and -dependent pathways. *J. Biol. Chem.* **272**, 23682-23689 (1997).
30. **Gurevich, V.V.**, Pals-Rylaarsdam, R., Benovic, J.L., Hosey, M.M., and Onorato, J.J. Agonist-receptor-arrestin, an alternative ternary complex with high agonist affinity. *J. Biol. Chem.* **272**, 28849-28852 (1997).
31. Goodman, O.B., Jr, Krupnick, J.G., Santini, F., **Gurevich, V.V.**, Penn, R.B., Gagnon, A.W., Keen, J.H., and Benovic, J.L. Role of arrestins in G-protein-coupled receptor endocytosis. *Adv. Pharmacol.* **42**, 429-433 (1998).
32. **Gurevich, V.V.** The selectivity of visual arrestin for light-activated phosphorhodopsin is controlled by multiple non-redundant mechanisms. *J. Biol. Chem.* **273**, 15501-15506 (1998).
33. Mukherjee, S., Palczewski, K., **Gurevich, V.V.**, Benovic, J.L., Banga, J.P., and Hunzicker-Dunn, M. A direct role for arrestins in desensitization of luteinizing hormone/choriogonadotropin receptor in porcine ovarian follicular membranes. *Proc. Natl. Acad. Sci. USA*, **96**, 493-498 (1999).
34. Gelber, E.I., Kroeze, W.K., Willins, D.L., Gray, J.A., Sinar, C.A., Hyde, E. G., **Gurevich, V.V.**, Benovic, J.L., and Roth, B.L. Structure and function of the third intracellular loop of the 5-hydroxytryptamine-2A receptor: the third intracellular loop is alpha-helical and binds purified arrestins. *J. Neurochem.* **72**, 2206-2214 (1999).
35. Mukherjee, S., Palczewski, K., **Gurevich, V.V.**, and Hunzicker-Dunn, M. Beta-arrestin-dependent desensitization of luteinizing hormone/choriogonadotropin receptor is prevented by a synthetic peptide corresponding to the third intracellular loop of the receptor. *J. Biol. Chem.* **274**, 12984-12989 (1999).
36. Koor, A., Celver, J., Abdryashitov, R.I., Chavkin, C., and **Gurevich, V.V.** Targeted construction of phosphorylation-independent  $\beta$ -arrestin mutants with constitutive activity in cells. *J. Biol. Chem.* **274**, 6831-6834 (1999).
37. Vishnivetskiy, S.A., Paz, C.L., Schubert, C., Hirsch, J.A., Sigler, P.B., and **Gurevich, V.V.** How does arrestin respond to the phosphorylated state of rhodopsin? *J. Biol. Chem.* **274**, 11451-11454 (1999).
38. Hosey, M.M., Pals-Rylaarsdam, R., Lee, K.B., Roseberry, A.G., Benovic, J.L., **Gurevich, V.V.**, and Bunemann, M. Molecular events associated with the regulation of signaling by M2 muscarinic receptors. *Life Sci.* **64**, 363-368 (1999).
39. Hirsch, J.A., Schubert, C., **Gurevich, V.V.**, and Sigler, P.B. The 2.8Å crystal structure of visual arrestin: a model for arrestin's regulation. *Cell* **97**, 257-269 (1999).
40. Schubert, C., Hirsch, J.A., **Gurevich, V.V.**, Engelman, D.M., Sigler, P.B., and Fleming, K.G. Visual arrestin activity may be regulated by self-association. *J. Biol. Chem.* **274**, 21186-21190 (1999).
41. Lee, K.B., Ptasienski, J.A., Pals-Rylaarsdam, R., **Gurevich, V.V.**, and Hosey, M.M. Arrestin binding to the M2 muscarinic acetylcholine receptor is precluded by an inhibitory element in the third intracellular loop of the receptor. *J. Biol. Chem.* **275**, 9284-9289 (2000).
42. Mushegian, A.R., Vishnivetskiy, S.A., and **Gurevich, V.V.** Conserved phosphoprotein interaction motif is functionally interchangeable between ataxin-7 and arrestins. *Biochemistry* **39**, 6809-6813 (2000).
43. Smith, W.C., Gurevich, E.V., Dugger, D.R., Shelamer, C.L., Vishnivetskiy, S.A., McDowell, H., and **Gurevich, V.V.** Cloning and functional characterization of salamander rod and cone arrestins. *Invest. Ophthalmol. Vis. Sci.* **41**, 2445-2455 (2000).
44. Mukherjee, S., **Gurevich, V.V.**, Jones, J.C.R., Casanova, J.E., Frank, S.R., Maizels, E.T., Bader, M.-F., Kahn, R.A., Palczewski, K., Aktories, K., and Hunzicker-Dunn, M. The ADP ribosylation factor nucleotide exchange factor ARNO promotes beta-arrestin release necessary for luteinizing hormone/choriogonadotropin receptor desensitization. *Proc. Natl. Acad. Sci. USA* **97**, 5901-5906 (2000).
45. Vishnivetskiy, S.A., Schubert, C., Climaco, G.C., Gurevich, Y.V., Velez, M.-G., and **Gurevich, V.V.** An additional phosphate-binding element in arrestin molecule: implications for the mechanism of arrestin activation. *J. Biol. Chem.* **275**, 41049-41057 (2000).



46. Celver, J.P., Lowe, J., Kovoov, A., **Gurevich, V.V.**, Chavkin, C. Threonine 180 is required for GRK3 and arrestin3 mediated desensitization of Mu opioid receptor in *Xenopus* oocytes. *J.Biol.Chem.*, **276**, 4894-4900 (2001).
47. Bennet, T.A., Prossnitz, E.R., Key, T.A., **Gurevich, V.V.**, Neubig, R., and Sklar, L.A. Real-time analysis of G protein-coupled receptor reconstitution in a solubilized system. *J.Biol.Chem.* **276**, 22453-22460 (2001).
48. Han, M., **Gurevich, V.V.**, Vishnivetskiy S.A., Sigler, P.B., and Schubert, C. Crystal Structure of  $\beta$ -Arrestin at 1.9Å: Possible Mechanism of Receptor Binding and Membrane Translocation. *Structure (Cambridge)* **9**, 869-880 (2001).
49. Key, T. A., Bennett, T. A., Foutz, T. D., **Gurevich, V. V.**, Sklar, L. A., and Prossnitz, E. R. Regulation of formyl peptide receptor agonist affinity by reconstitution with arrestins and heterotrimeric G proteins. *J. Biol. Chem.* **276**, 49204-49212 (2001).
50. Bennett, T. A., Foutz, T. D., **Gurevich, V. V.**, Sklar, L. A., and Prossnitz, E. R. Partial phosphorylation of the N-formyl peptide receptor inhibits G protein association independent of arrestin binding. *J. Biol. Chem.* **276**, 49195-49203 (2001).
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53. Celver, J., Vishnivetskiy, S.A., Chavkin, C., and **Gurevich, V.V.** Conservation of the phosphate-sensitive elements in the arrestin family of proteins. *J. Biol. Chem.* **277**, 9043-9048 (2002).
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55. Mukherjee, S., **Gurevich, V.V.**, Preninger, A., Hamm, H.H., Bader, M.-F., Fazleabas, A.T., Birnbaumer, L., and Hunzicker-Dunn, M. Aspartic acid 564 in the third cytoplasmic loop of luteinizing hormone/choriogonadotropin receptor is crucial for phosphorylation-independent interaction with arrestin2. *J. Biol. Chem.* **277**, 17916-17927 (2002).
56. DeGraff, J.L., **Gurevich, V.V.**, and Jeffrey L. Benovic, J.L. The third intracellular loop of alpha-2-adrenergic receptors determines subtype specificity of arrestin interaction. *J. Biol. Chem.* **277**, 43247-43252 (2002).
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58. Key, T.A., Foutz, T.D., **Gurevich, V.V.**, Sklar, L.A., and Prossnitz, E.R. N-formyl peptide receptor phosphorylation domains differentially regulate arrestin and agonist affinity. *J. Biol. Chem.* **278**, 4041-4047 (2003).
59. Pan, L., Gurevich, E.V., and **Gurevich, V.V.** The nature of the arrestin-receptor complex determines the ultimate fate of the internalized receptor. *J. Biol. Chem.* **278**, 11623-11632 (2003).
60. Raman, D., Osawa, S, **Gurevich, V.V.**, and Weiss, E.R. The interaction with the cytoplasmic loops of rhodopsin plays a crucial role in arrestin activation and binding. *J.Neurochem.* **84**, 1040-1050 (2003).
61. Gray, J.A., Bhatnagar, A., **Gurevich, V.V.**, and Roth, B.L. The interaction of a constitutively active arrestin with the arrestin-insensitive 5-HT<sub>2A</sub> receptor induces agonist-independent internalization. *Mol. Pharmacol.* **63**, 961-972 (2003).
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60. Berndt, S., **Gurevich, V.V.**, Gurevich, E.V. Arrestins in cell death. Ch 19 in “The structural basis of arrestin functions”, pp. 273-302. Springer-Verlag, Berlin-Heidelberg, ISBN 978-3-319-57552-0 (2017).
61. **Gurevich, V.V.** and Gurevich, E.V. Molecular mechanisms of GPCR signaling *Int J Mol Sci* **18** (12), E2519; doi: 10.3390/ijms18122519 (2017).
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65. **Gurevich, V.V.** Protein Flexibility and Cellular Signaling. *EC Pharmacology and Toxicology* **6.6**, 384-389 (2018).
66. **Gurevich, V.V.**, Gurevich, E.V. Arrestins and G proteins in cellular signaling: the coin has two sides. *Sci Signal* **11** (549), eaav1646; doi: 10.1126/scisignal.aav1646 (2018).
67. **Gurevich, V.V.**, Chen, Q., Gurevich, E.V. Arrestins: introducing signaling bias into multi-functional proteins. *Prog Mol Biol Transl Sci* **160**, 47-61 (2018).
68. **Gurevich, V.V.**, Gurevich, E.V. Arrestin-mediated signaling: is there a controversy? *World J Biol Chem* **9** (3) 25-35 (2018). DOI: <https://dx.doi.org/10.4331/wjbc.v9.i3.25>
69. **Gurevich, V.V.**, Gurevich, E.V. Arrestin mutations: some cause diseases, others promise cure. *Prog Mol Biol Transl Sci*, in press (2019).
70. Perry, N.A., Zhan, X., Gurevich, E.V., Iverson, T.M., **Gurevich, V.V.** Using in vitro pull-down and in cell overexpression assays to study protein interactions with arrestins. In: Beta-arrestins, S. Laporte, Ed. Springer-Verlag, Berlin-Heidelberg (2019).
71. **Gurevich, V.V.**, Gurevich, E.V. The structural basis of the arrestin binding to GPCRs. *Mol Cell Endocrinol*, in press (2019).

#### BOOK EDITOR

1. Arrestins – Pharmacology and Therapeutic Potential. Handbook of Experimental Pharmacology 219, Springer-Verlag, Berlin-Heidelberg, ISBN: 978-3-642-41198-1 (2014).
2. G protein-coupled receptor kinases. Co-edited with Eugenia V. Gurevich and John G. Tesmer. Springer-Verlag, Berlin-Heidelberg, ISBN: 978-1-4939-3796-7 (2016).
3. The structural basis of arrestin functions. Springer-Verlag, Berlin-Heidelberg, ISBN 978-3-319-57552-0 (2017)

#### INVITED PRESENTATIONS:

1. Harvard University, Department of Ophthalmology, March 1996.
2. Jacques Monod Conference “Molecular and Cellular Biology of Ras-like and Heterotrimeric G Proteins”, June 1996, France.
3. New York University, Department of Pharmacology, May 1998.
4. Millennium Pharmaceuticals, Inc., September 1999.
5. Vanderbilt University, Department of Pharmacology, March 2001.
6. Case Western Reserve University, Department of Ophthalmology, March 2001.
7. Mayo Clinic, Department of Pharmacology, March 2001.
8. University of New Mexico, Department of Cell Biology and Physiology, June 2001.
9. Pharmacology of Adrenoceptors. The 2nd Annual ASPET G Protein-Coupled Receptor Symposium - An official satellite meeting of the IUPHAR XIVth World Congress of Pharmacology. Rohnert Park, CA, June 2002.
10. University of North Carolina, Department of Pharmacology, February 2003.
11. University of Utah, Department of Ophthalmology and Visual Sciences, Moran Eye Center, February 2003.
12. University of Miami School of Medicine, Department of Molecular and Cellular Pharmacology, May 2003.
13. Case Western Reserve University, Department of Biochemistry, September 2003.
14. Medical College of Wisconsin, Department of Biophysics, October 2003.
15. Oregon Health Sciences University, Department of Behavioral Neuroscience, February 2004.
16. Portland Veterans Administration Medical Center, February 2004.
17. University of Texas Medical Branch (Galveston), Department of Neuroscience and Cell Biology, March 2004.

18. Cleveland Clinic Foundation, Cole Eye Institute, Department of Ophthalmology, November 2004.
19. University of Rochester, Department of Pharmacology and Physiology, November 2006.
20. University of Louisville, Department of Pharmacology and Toxicology, November 2006.
21. Tennessee State University, Department of Biological Sciences, February 2007.
22. The Biology and Chemistry of Vision, FASEB summer research conference, Snowmass Village, CO, June 2007.
23. International Narcotics Research Conference, Berlin, Germany, July 2007.
24. Charité Universitätsmedizin Berlin, Institut für Medizinische Physik und Biophysik, Berlin, Germany, July 2007.
25. University of Texas Health Science Center at Houston, Department of Integrative Biology and Pharmacology, January 2008
26. Tennessee State University, Department of Biological Sciences, September 2008.
27. 10th International Dahlem Symposium "Signal Recognition and Transduction", Berlin-Dahlem, February 2009.
28. The University of Texas at Austin, Institute for Cellular and Molecular Biology, September 2009.
29. Medical College of Georgia, Department of Pharmacology and Toxicology, October 2009.
30. Drug Discovery: Targets and Tools. Berlin, Germany, March 17-19, 2010
31. Keystone Symposium: G protein-coupled receptors. Breckenridge, CO, April 7-12, 2010
32. Evolution of G Protein Coupled Signaling: Lineages, Constraints, and Tempo. Chapel Hill, NC, May 17-19, 2010
33. Leipzig University, Germany, Department of Biological Sciences, June 2010.
34. Neurotalk-2010, Singapore, June 25-28, 2010
35. Keystone Symposium: Trans-membrane signaling by GPCRs and channels. Taos, NM, January 23-28, 2011
36. The Scripps Research Institute, Departments of Molecular Biology, Chemistry, and Cell Biology, March 7, 2011
37. Cold Spring Harbor Conference Asia, Membrane proteins: Structure and function, Suzhou, China, May 16-20, 2011.
38. Leipzig University, Germany, Department of Biological Sciences, May 2011.
39. The Biology and Chemistry of Vision, FASEB summer research conference, Carefree, AZ, June 19-24, 2011.
40. MRC Laboratory of Molecular Biology, Hills Road, Cambridge CB2 0QH, UK, September 7, 2011.
41. Institut de Génomique Fonctionnelle, UMR 5203 CNRS – U 661 INSERM, University Montpellier, 34094 Montpellier Cedex 05, France, September 9, 2011.
42. NRW International Graduate Research School, Universität Bonn, Konviktstrasse 9, 53113 Bonn, Germany, September 13, 2011.
43. Paul Scherrer Institut, OFLC-103, 5232 Villigen PSI, Switzerland, September 15, 2011.
44. Cell Signaling Technology, Danvers, MA, April 5, 2012.
45. Modulators of GPCR trafficking and signaling, satellite of Endocrine Society annual meeting (ENDO 2012), Houston, TX, June 22, 2012.
46. 15<sup>th</sup> International Conference on Retinal Proteins, Monte Verita, Ascona, Switzerland, September 29 - October 5, 2012.
47. Medical College of Wisconsin, October 26, 2012.
48. University of Washington, Department of Pharmacology, May 21, 2013.
49. Leipzig University, Germany, Department of Biological Sciences, July 8-11, 2013.
50. 14<sup>th</sup> Annual Great Lakes GPCR retreat, Cleveland, OH, October 17-19, 2013.
51. Leipzig-Vanderbilt symposium, Pharmacology section, Vanderbilt University, October 31, 2013.
52. Loyola University, Department of Pharmacology, December 4, 2013.
53. University of Florida, Gainesville, Department of Pharmacology, February 5, 2014.

54. University of Tennessee Health Science Center, Memphis, Department of Pharmacology, March 5, 2014.
55. Meeting: “G protein-coupled receptors: structural dynamics and functional implications”. Keystone symposium, Snowbird, Utah, March 30 through April 4, 2014.
56. 5<sup>th</sup> Focused Cell Signaling Meeting, British Pharmacological Society, Leicester, UK, April 28-29, 2014.
57. Meeting “Biomolecular structure, dynamics, and function: membrane proteins”. Vanderbilt University, May 2-4, 2014.
58. ARVO annual meeting, Symposium Phototransduction, May 6, Orlando, FL, May 4-7, 2014.
59. Department of Pharmacology, University of Michigan, Ann Arbor, May 8-9, 2014.
60. Faculty of Pharmacy, University of Toronto, Toronto, Canada, May 15, 2014.
61. Meeting “GPCRs: Structure, function, and drug discovery”. Boston, MA May 22-23, 2014.
62. FASEB meeting “G protein-coupled receptor kinases: from molecules to diseases”. Steamboat Springs, CO (June 8-13, 2014).
63. Keynote talk at the 2014 G Protein Signaling Workshop, Philadelphia, PA (June 16, 2014).
64. GPCR structure, function, drug discovery, and crystallography. Academia-industry international conference, Kavli Royal Society International Centre, Chicheley Hall, Chicheley, Newport Pagnell, Buckinghamshire, MK16 9JJ, United Kingdom (1-2 September 2014).
65. Department of Pharmacology, Marburg University, Marburg, Germany (September 4, 2014).
66. JSEI, UCLA, Los Angeles, CA (October 17, 2014).
67. Symposium “Biased agonist: an emerging paradigm in GPCR drug discovery” at the 249<sup>th</sup> ACS meeting, Denver, Colorado (March 22, 2015).
68. Julius Axelrod Symposium “The ins and outs of G protein-coupled receptor signaling”, ASPET meeting, Boston, Massachusetts (March 29, 2015).
69. 2<sup>nd</sup> GPCR Targeted Screening, Berlin, Germany (May 7-8, 2015).
70. 11<sup>th</sup> International NPY-PYY-PP Meeting, Leipzig, Germany (August 22-26, 2015).
71. International Conference on Synthetic Biology, Houston, TX (September 28-29, 2015).
72. VisionFest-2015, Vanderbilt University, Nashville, TN (November 9, 2015).
73. Department of Ophthalmology, Baylor College of Medicine, Houston, TX (November 20, 2015).
74. Institute of Neurobiology, San Juan, Puerto Rico (January 20, 2016).
75. Wittenberg University, Department of Chemistry, Springfield, OH (April 5, 2016).
76. 2016 G protein signaling workshop, New York, NY (June 14, 2016).
77. Tennessee Tech University, Department of Chemistry, Cookeville, TN (September 9, 2016).
78. Augusta University, Department of Pharmacology and Toxicology, Augusta, GA (December 2, 2016).
79. Case Western Reserve University, Departments of Ophthalmology and Pharmacology, Cleveland, OH (February 28, 2017).
80. Austin Peay State University, Department of Biology, Clarksville, TN (March 13, 2017).
81. EB 2017, ASPET mini-symposium “GRKs and b-arrestins in cardiovascular therapy”, Chicago, IL (April 24, 2017).
82. University of Illinois-Chicago, Department of Physiology and Biophysics, Chicago, IL (May 12, 2017).
83. FASEB meeting “G protein-coupled receptor kinases and arrestins: from structure to disease”. Saxtons River, VT (June 11-16, 2017).
84. Southeastern Vision Conference, Nashville, TN (October 2-3, 2017).
85. NIH NIDDK, Bethesda, MD (November 1, 2017)
86. XXIII Biennial Meeting of the International Society for Eye Research, Belfast, Northern Ireland, UK (September 9-13, 2018).

**ABSTRACTS:**

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2. **Gurevich, V.V.**, Krasovskaya, L.A., Muranov, A.V., Muranova, T.A., and Natochin, M.Y. Purification of  $\beta$ 2-adrenergic receptor by affinity and HPLC gel-filtration. 4th All-Union University Conference of Cell Biology, Tbilisi, 1985, Abstracts, v.1, pp. 209-210.
3. **Gurevich, V.V.**, Zozulya, S.A., Zvyaga, T.A., Natochin, M.Y., Gryaznov, S.M., Shirokova, E.P., and Korotkova, N.V. Synthesis of bovine visual rhodopsin in vitro. 7th All-Union Symposium of Protein and Peptide Chemistry, Tallinn, 1987, Abstracts, pp. 47-48.
4. **Gurevich, V.V.**, Zozulya, S.A., Shmukler, B.E., Zvyaga, T.A., Natochin, M.Y., Gryaznov, S.M., Shirokova, E.P., and Ovchinnikov, Yu.A. In vitro expression of the visual rhodopsin. 14th International Congress of Biochemistry, Prague, 1988, Abstracts, v. 1, p. 207.
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6. **Gurevich, V.V.**, Pokrovskaya, I.D., Zerf, E.P., Obukhova, T.A., and Zozulya, S.A. Functional role of two negative charges in transmembrane domains of bovine rhodopsin. 6th International Conference of Young Scientists on Organic and Biological Chemistry, Berlin, 1989, Abstracts, p. 87.
7. Zerf, E.P., **Gurevich, V.V.**, Pokrovskaya, I.D., Dumler, I.L., Garnovskaya, M.N., and Zozulya, S.A. Functional properties of bovine rhodopsin mutants Asp83Asn and Glu134Gln. All-Union Symposium on Protein Chemistry, Tbilisi, 1990, Abstracts, p. 38.
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9. **Gurevich, V.V.**, Pokrovskaya, I.D., Garnovskaya, M.N., Dumler, I.L., Obukhova, T.A., Zerf, E.P., and Zozulya, S.A. Protein engineering study of the role of negatively charged residues in II and III transmembrane domains of visual rhodopsin. 7th International Conference of Young Scientists on Organic and Biological Chemistry, Varna, 1990, Abstracts, pp. 125-127.
10. Pokrovskaya, I.D., **Gurevich, V.V.**, Garnovskaya, M.N., Dumler, I.L., and Zozulya, S.A. Visual rhodopsin does not need protein translocation machinery for proper cotranslational insertion into lipid bilayer. 7th International Conference of Young Scientists on Organic and Biological Chemistry, Varna, 1990, Abstracts, pp. 112-114.
11. **Gurevich, V.V.**, and Benovic, J.L. Functional expression and truncation mutagenesis of arrestin and  $\beta$ -arrestin in a cell-free translation system. LVII Cold Spring Harbor Symposium on Quantitative Biology, The Cell Surface, Cold Spring Harbor, NY, 1992, Abstracts, p. 43.
12. **Gurevich, V.V.**, Dion, S.B., Onorato, J.J., Ptasienski, J., Kim, C.M., Sterne-Marr, R., Hosey, M.M., and Benovic, J.L. Arrestin interactions with G protein-coupled receptors: Direct binding studies of wild-type, truncated, and chimeric arrestins with rhodopsin,  $\beta$ 2-adrenergic, and m2 muscarinic cholinergic receptors. Pharmacology of Adrenoceptors (Satellite of the XIIth IUPHAR Congress), King of Prussia, PA, 1994, Abstracts, p. 26.
13. Kunapuli, P. **Gurevich, V.V.**, and Benovic, J.L. Regulation of the G protein-coupled receptor kinase GRK5 by autophosphorylation. FASEB J. 8 (7), A1327 (1994).
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15. **Gurevich, V.V.**, and Benovic, J.L. The mechanism of phosphorylation-recognition by visual arrestin: phosphorylation-independent arrestin mutants. ARVO Annual Meeting, Fort Lauderdale, FL, 1996, IOVS 37 (3) p. S239 (1084).
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18. Gray-Keller, M.P., P.B. Detwiler, **Gurevich, V.V.**, and Benovic, J.L. Single amino acid substitution in visual arrestin quenches light-activated rhodopsin. ARVO Annual Meeting, Fort Lauderdale, FL, 1997, IOVS 38 (4) p. S23 (99 Part I).
19. **Gurevich, V.V.** Constitutively active arrestin mutants: can they be used to manipulate the efficiency of signaling by G protein-coupled receptors. Society for Neuroscience 27 Annual Meeting, New Orleans, 1997, v. 23, Part 2, p. 2339.
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21. Benovic, J.L., Gagnon, A.W., Goodman, O.B., **Gurevich, V.V.**, Kallal, L., Krupnick, J.G., Penn, R.B., Santini, F., and Keen, J.H. Role of arrestins in regulating G protein-coupled receptor signaling and trafficking. J. Leukocyte Biol. 63, Suppl. 1 (1998).
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23. Mukherjee, S., Palcewski, K, **Gurevich V.V.**, and Hunzicker-Dunn, M. Role of arrestin protein in regulating desensitization of LH/CG receptor in porcine follicular membranes. 19<sup>th</sup> annual minisymposium at the Center for Reproductive Sciences, Northwestern University, Evanston, IL, October 1998.
24. **Gurevich, V.V.** Multiple non-redundant mechanisms control arrestin selectivity towards P-Rh\*. ARVO Annual Meeting, Fort Lauderdale, FL, 1998. IOVS 39 (4) p.S954.
25. Mukherjee, S., **Gurevich, V.V.**, and Hunzicker-Dunn, M. Phosphorylation independent mutants of arrestin protein promote desensitization of LH/CG receptor in porcine follicular membranes. 81<sup>st</sup> Annual Endocrine Society meeting, June 1999, San Diego, CA.
26. Mukherjee, S., **Gurevich, V.V.**, and Hunzicker-Dunn, M. Phosphorylation independent mutants of arrestin protein promote desensitization of LH/CG receptor in porcine follicular membranes. 12<sup>th</sup> Signal transduction meeting, May 1999, San Diego, CA.
27. Raman, D., Osawa, S., **Gurevich, V.V.**, and Weiss, E.R. The binding of the mutant R175E arrestin to rhodopsin mutants in a phosphorylation-independent manner. ARVO Annual Meeting, Fort Lauderdale, FL, 1999. IOVS 40 (4) p. S209 (1100B8).
28. Vishnivetskiy, S.A., and **Gurevich, V.V.** A mosaic of charged groups in arrestin phosphate-binding pocket: surprising interchangeability of positive and negative charges. ARVO Annual Meeting, Fort Lauderdale, FL, 1999. IOVS 40 (4) p. S210 (1106B14).
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39. **Gurevich, V.V.**, Vishnivetskiy, S.A., Schubert, C., Climaco, G.C., Gurevich, Y.V., and Velez, M.-G. Arrestin has two phosphate-binding elements localized in the two "hot spots" that must be rearranged for rhodopsin binding. ARVO Annual Meeting, Fort Lauderdale, FL, 2001. IOVS 42 (4) S307 (1655 Suppl).
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42. **Gurevich, V.V.**, Vishnivetskiy, S.A., and Velez, M.-G. The role of amphipathic alpha-helix I in arrestin membrane translocation. ARVO Annual Meeting, Fort Lauderdale, FL, 2002. IOVS 43, 1394 Suppl.
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44. Vishnivetskiy, S.A., Wiener, R., Lvov, A., Hirsch, J.A., and **Gurevich, V.V.** Temperature Dependence of Arrestin Binding to Rhodopsin: Role of Arrestin Structural Elements in Stabilizing its Basal Conformation. ARVO Annual Meeting, Fort Lauderdale, FL, 2003. IOVS 44, 1516 Suppl.
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