

CURRICULUM VITAE
PETER N. DEVREOTES, Ph.D.

PERSONAL INFORMATION:

Department of Cell Biology
Johns Hopkins University School of Medicine
725 N. Wolfe St., 114 WBSB
Baltimore, MD 21205
E-mail: pnd@jhmi.edu
Web Page: www.hopkinsmedicine.org/cellbio/devreotes

410-955-3225 (office)
410-955-4699 (lab)
410-502-6810 Brigitte Walsh (Assistant)
410-614-9461 (fax)

EDUCATION:

1977, Ph.D., Biophysics
Johns Hopkins University, Baltimore, Maryland
Graduated Summa Cum Laude

1971, B.S., Physics
University of Wisconsin, Madison, Wisconsin
Phi Kappa Phi Graduate

RESEARCH EXPERIENCE:

2009-present, Isaac Morris and Lucille Elizabeth Hay Professor of Embryology,
Department of Cell Biology
The Johns Hopkins University School of Medicine

2000-2020, Professor and Director of the Department of Cell Biology,
The Johns Hopkins University School of Medicine

1987-2000, Professor, Department of Biological Chemistry,
The Johns Hopkins University School of Medicine

1985-1987, Associate Professor, Department of Biological Chemistry,
The Johns Hopkins University School of Medicine

1980-1985, Assistant Professor, Department of Biological Chemistry,
The Johns Hopkins University School of Medicine.

1977-1980, Damon Runyon Cancer Fund Fellow, Department of Biochemistry,
University of Chicago, with Theodore L. Steck

1971-1977, Graduate Student, Department of Biophysics,
The Johns Hopkins University, with Douglas Fambrough

AWARDS and MAJOR PRESENTATIONS

E.B. Wilson Medal of the American Society for Cell Biology (2019)

E.B. Wilson Lecture ASCB meeting Washington, DC (2019)
Bei Shizhang Lecture, Institute of Biophysics, Chinese Academy of Sciences, Beijing, China (2017)
Inaugural Richard Goode Lecture, University of California, Santa Barbara (2017)
ASCB Inaugural Fellow (2016)
Keynote Speaker Gordon Research Seminar on Directed Cell Migration, Galveston TX (2013)
Plenary Lecture, Workshop on Cell Signaling and Cytoskeleton in Directed Cell Migration, Vanderbilt University, Nashville, TN (2012)
Keynote Speaker, Annual Molecular Biotechnology Symposium, North Carolina State, NC (2010)
Keynote Speaker, Cold Spring Harbor Symposium Axon Guidance, Cold Spring Harbor, NY (2010)
Keynote Speaker, Gordon Conference on "Phosphorylation and G-Protein Signaling Networks, Biddeford, ME (2007)
Keynote Speaker, Gordon Conference on "Fibronectins, Integrins & Related Molecules," Il Ciocco, Italy (2007)
Keynote Speaker, 7th Annual Great Lakes GPCR, Detroit, MI (2006)
Robert E. Davies Lecture, University of Pennsylvania, Philadelphia, PA (2006)
Danny Thomas Lectureship, St. Jude Children's Research Hospital, Memphis, TN (2006)
NIH Merit Award (2005)

Elected to the National Academy of Sciences (2005)

American Society for Cell Biology Elected Council Member (2004-2007)
Plenary Lecture, Keystone Symposia, Snowbird, UT (2005)
Keynote Speaker, 3rd TLL Life Sciences Symposium, Singapore (2004)
Plenary Lecture, Second Messengers & Phosphoproteins, Montreal, Canada (2004)
Plenary Lecture, 62nd Annual Meeting of Society for Developmental Biology, Boston, MA (2003)
Keynote Speaker, Keystone Symposia, Breckenridge, CO (2003)
Kenneth Sparks/Julia Fisher Lectureship, University of Connecticut (2001)
The Myron Levine Lectureship, University of Michigan, Ann Arbor, MI (2001)
14th Annual Signal Transduction Symposium Chicago, IL (2001)
Plenary Lecture, Japanese Dictyostelium Meeting, Tskuba (2000)
UMBC Symposium Keynote Speaker (2000)
University Lecture Series UT South Western (1999)
Plenary Lecture XIII ECRO Congress Siena Italy (1998)
UCSD Beckman Symposium on Signal Transduction (1997)
Staples Seminar, University of Maine (1996)
Second Messengers and Protein Phosphorylation Plenary Lecture (1995)
Givaudan-Roure Lecture, American Chemosensory Society (1994)
Gruber Lecturer, University of Groningen, the Netherlands (1993)
American Heart Association Established Investigator (1984-1989)
American Cancer Society Junior Faculty Research Award (1981-1984)

ACTIVITIES:

Allen Institute for Cell Science Advisory Board member (2014-present)
Site Visitor The Allen Discovery Center Tufts University (2019)
NIH Fellowship Review Panel: Cell Biology, Developmental Biology, and Bioengineering (2014)
NIH/CSR Nuclear and Cytoplasmic Structure/Function and Dynamics Study Section (2012)

NAS Class Membership Committee (2012)
Searle Scholars Program Advisory Board member (2007-2011)
External Advisory Committee of the Cell Migration Consortium (2007-2011)
National Academy of Sciences - Liaison to National Research Council for Section 23 (2007-2009)
NIH Cell Structure Function Study Section (2007)
NRSA Cell Biology and Development Fellowship Study Section (2007)
External Reviewer for Chair of Department of Cell Biology at University of Virginia (2007)
Institute for NanoBioTechnology Steering Committee (2005-2010)
American Society for Cell Biology Elected Council Member, (2004-2007)
Chair and Founder, Gordon Conference on "Gradient Sensing and Directed Cell Migration" (2005)
PNAS Editor (2006-present:six manuscripts per year)
Ad hoc Reviewer for journals: *Science, Cell, Nature, JCB, MBOC, EMBO, PLOS Biol,*
Associate Editor, *Molecular Biology of the Cell*, (1997-2004)
NIH Biochemistry Study Section Ad hoc Reviewer (1997-1999)
NIH Cell Biology Study Section Ad hoc Reviewer (1996-1997)
American Cancer Society Scientific Review Committee (1990-1993)
Chair, Gordon Conference on Sensory Transduction in Microorganisms (1990)
American Society for Biochemistry and Molecular Biology
American Society for Cell Biology (1988-present)
Vice Chair, Gordon Conference on Sensory Transduction in Microorganisms (1988)
Van der Klaus Visiting Professor, University of Leiden (1986)

DEPARTMENTAL AND MEDICAL SCHOOL ACTIVITIES:

Director, Department of Cell Biology (2000-present)
Agenda Committee of the Advisory Board (2010-2014, 2017-2019)
Professorial Promotions Committee (2004-2009)
Division of Johns Hopkins Singapore Search Committee (2004-2006)
Biophysics Department Director Search Committee (2004-2006)
Physiology Department Director Search Committee (2004-2005)
Advisory Board for the Basic Sciences Microscope Facility (1998-present)
Director, Biochemistry, Cellular and Molecular Biology Graduate Program (1990-2000)
Associate Professor Promotions Committee (1987-1990)
Medical School Council (1987-1990)
BCMB Graduate Student Admissions Committee (1981-1990)
Medical School Radiation Safety Council (1987-1990)
BCMB Graduate Student Steering Committee (1981-1990)
Organizer Department Seminar Program (1986-1990)
Organizer Department Journal Club (1981-94)

PATENTS:

US Patent for "Activation of Heterotrimeric G-Proteins" Serial No. 7,691,564

TEACHING EXPERIENCE:

Lectures for thirty years in the following areas:
BCMB Graduate Program (1980-2000): "Enzyme Kinetics", "Transmembrane Signaling"

BCMB Graduate Program (2000-present) "Strategies for Cell Biology Research"
Received the Graduate Student Teaching Award of 1990
Medical School Biochemistry: (1980-2000) "Cell Surface Receptors", "Glycogen Metabolism"
Medical School Cell Biology (2000-present) "Signal Transduction," "Cell Growth, Death and Cancer"

STUDENTS AND FELLOWS TRAINED:

Tit-Yee Wong (Postdoctoral Fellow: 1981-1983)
Professor, Department of Biology, University of Memphis, Memphis, TN

Donna Fontana (Postdoctoral Fellow: 1982-1986)
Physician, Arthritis & Rheumatology Consultants, Edina, MN

Barry Knox (Postdoctoral Fellow: 1984-1985)
Professor, Biochemistry & Molecular Biology & Ophthalmology, SUNY Upstate Medical University, Syracuse, NY

Anne Theibert (Predoctoral Fellow: 1981-1985; Postdoctoral Fellow: 1985-1987)
Professor, Department of Neurobiology
Co-Director, Undergraduate Neuroscience Program
University of Alabama School of Medicine at Birmingham, AL

Cathy Berlot (MD-PhD Predoctoral Fellow: 1983-1985 via collaboration with James Spudich)
Awards: Medical Scientist Training Program Scholarship, 1982-87
Staff Scientist, Weis Center for Research, Geisinger Clinic, Danville, PA

Peter Klein (MD-PhD Predoctoral Fellow: 1984-1988)
Awards: Paul Ehrlich Research Award, 1987
Professor, Department of Medicine, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA

Roxanne Vaughan (Postdoctoral Fellow: 1986-1989)
Professor, Dept. of Biochemistry and Molecular Biology
University of North Dakota, Grand Forks, ND

Julia Sun (Postdoctoral Fellow: 1987-1990)
Staff Scientist, Industry Research, Taiwan

Maureen Brandon (Postdoctoral Fellow: 1986-1991)
Dean, Fort Lewis College, Durango, CO

Robert Gundersen (Postdoctoral Fellow: 1986-1991)
Associate Professor & Chair, Department of Molecular & Biomedical Sciences, University of Maine, Orono, ME

Ronald Johnson (Predoctoral Fellow: 1987-1992).

Awards: Predoctoral NRSA Award, 1987-89; JHU Young Investigator's Award, 1992
Director, Cancer Etiology Branch, Division of Cancer Biology, NIH, Bethesda, MD

Geoffrey Pitt (MD/PhD Predoctoral Fellow: 1988-1993)

Awards: Medical Scientist Training Program Scholarship 1988-93
Paul Ehrlich Research Award, 1993

Ida and Theo Rossi Distinguished Professor of Medicine

Director, Cardiovascular Research Institute, Weill Cornell Medicine, New York, NY

Lijun Wu (Postdoctoral Fellow: 1991-1994)

Chief Executive Officer & Senior Vice President, Fosun Pharma USA, Shanghai Fosun Pharma
Development Co., Ltd.

Pamela Lilly McNelis (Predoctoral Fellow: 1987-1994)

Previously Staff Scientist at ChemDex, Currently Homemaker, Cupertino, CA

Robert Insall (Postdoctoral Fellow: 1992-1995)

Winner of Postdoctoral Research Award, 1995

Sr. Group Leader and Professor of Genetics & Cell Biology, CR-UK Beatson Institute for Cancer
Research, Glasgow, UK

Michael Caterina (MD-PhD Predoctoral Fellow 1989-1995)

Awards: Searle, Pew, and Beckman Awards, Alpha Omega Alpha Medical Honor Society (1995),
Gate Pharmaceuticals Medical Student Award (1995)

Professor, Department of Biological Chemistry, Johns Hopkins University School of Medicine,
Baltimore, MD

Dale Hereld (Postdoctoral Fellow: 1989-1995)

Awards: Damon Runyun-Walter Winchell Cancer Research Fund Fellowship Award, 1990-92
Program Director, NIH/NIAAA, Division of Metabolism and Health Effects, Bethesda, MD

Jacqueline Milne (Postdoctoral Fellow: 1991-1996)

Awards: Medical Research Council of Canada Postdoctoral Fellowship, 1991-93, Medical Research
Council of Canada Centennial Fellowship, 1993-96, JHU Young Investigator's Award, 1996

Head, Electron Microscopy Core

Associate Scientist, NCI / CCR / NIH, Bethesda, MD

Ji-Yun Kim (Predoctoral Fellow: 1989-1997)

Sr. Research Scientist, Bayer Healthcare, Richmond, CA

Mei-Yu Chen (Predoctoral Fellow: 1991-1997)

Awards: Merck Foundation Predoctoral Fellowship, 1992-97

Professor, Inst. of Biochemistry & Molecular Biology, National Yang-Ming University, Taipei,
Taiwan

Brenda Blacklock (Postdoctoral Fellow: 1995-1997)
Senior Lecturer, Dept. of Chemistry & Chemical Biology, Indiana University-Purdue University,
Indianapolis, IN

Zhan Xiao (Predoctoral Fellow: 1994-1999)
Associate Research Investigator, Abbott Laboratories, Abbott, IL
Misook Kim (Postdoctoral Fellow: 1998-1999)
Homemaker, Korea

Yihong Yao (Postdoctoral Fellow: 1997-2000)
Senior Scientist, Abbott Bioresearch Center, Worcester, MA

Carole Parent (Postdoctoral Fellow: 1994-2000)
Awards: Medical Research Council of Canada Postdoctoral Fellowship (1993-1996), American
Cancer Society Institutional Award (1996-1997), NIH RO1 Co-PI w/Dr. Devreotes
Professor of Pharmacology, Dept. of Pharmacology, University of Michigan Medical School, Ann
Arbor, MI

Saskia Van Es (Postdoctoral Fellow: 1996-2000)
Planner, EU University Amsterdam, The Netherlands

Tian Jin (Postdoctoral Fellow: 1994-2001)
Awards: NIH Nephrology Training Program Postdoctoral Fellowship, 1998-99, NIH National Public
Health Postdoctoral Fellowship, 1996-98
Chief, Chemotaxis Signal Section, Laboratory of Immunogenetics, NIAID / NIH, Bethesda, MD

Ning Zhang (Predoctoral Fellow: 1996-2001)
Chief, Laboratory of Translational Cancer Biology, Tianjin Medical University, Tianjin, China

Jeffrey Keefer (Research Fellow: 2001)
Assistant Professor, Pediatric Hematology
John's Hopkins Children's Center, Baltimore, MD

James Silverman (Predoctoral Fellow: 1997-2004)
Medical Science Liaison, Teva Pharmaceuticals Industries

Elaine Huang (Predoctoral Fellow: 1999-2004)
Research Scientist, Metamark Genetics

Carol Manahan (Postdoctoral Fellow: 2000-2004)
Associate Director, Scientific Education & Review, Novartis Institute for Biomedical Research,
Cambridge, MA

Chris Janetopoulos (Postdoctoral Fellow: 2000-2003; Research Associate: 2004-2005)
Awards: ACS Postdoctoral Fellowship 2000, JHU Albert Lehninger Young Investigators Award
2002
Associate Professor, Department of Biological Sciences, University of the Sciences, Philadelphia, PA

Miho Iijima (Postdoctoral Fellow: 2000-2004; Research Associate: 2004-2006)
Associate Professor, Department of Cell Biology
Johns Hopkins University School of Medicine, Baltimore, MD

Mark Landree (Postdoctoral Fellow: 2000-2006)
Awards: American Cancer Society Postdoctoral Fellowship, 2002-05
GenBank Biologist, NCBI/NIH ComputerCraft, Inc., McLean, VA

Francisca (Paquita) Vazquez (Research Associate: 2003-2006)
Research Scientist, Dana Farber Cancer Institute, Boston, MA

Lingfeng Chen (Predoctoral Fellow: 2000-2006)
Scientist, NIH, Division of Intramural Research, Lippincott-Schwartz Lab: Advanced Microscope Facility, Bethesda, MD

Linnan Tang (Predoctoral Fellow: 1999-2007)
Assistant Professor, Dept. of Radiology,
UT Southwestern Medical Center, Dallas, TX

Sandra de Keijzer (Postdoctoral Fellow: 2005-2006)
Postdoctoral Fellow, Program Officer, Stichting FOM, The Netherlands

Stacey Willard (Postdoctoral Fellow: 2005-2009)
Award: Ruth L. Kirschstein NRSA Postdoctoral Fellowship, 2006-08
Product Marketing Manager, Life Sciences
IMI Precision Engineering, Farmington, CT

Jonathan Franca-Koh (Postdoctoral Fellow: 2003-2009)
Program Director, NCI Division of Cancer Biology, Physical Sciences-Oncology, NIH, Bethesda, MD

Josephine (Hoi-Yan) Lee (Predoctoral Fellow: 2009-2010)
Medical Student, National University of Singapore

Meghdad Rahdar (Predoctoral Fellow: 2005-2010)
Assistant Director, Ionis Pharmaceuticals, Carlsbad, CA

Yoichiro Kamimura (Postdoctoral Fellow: 2004-2011)
Research Scientist, Laboratory for Cell Signaling Dynamics, Cell Dynamics Research Core, RIKEN, Japan

Zachary Gagnon (Postdoctoral Fellow: 2009-2011)
Assistant Professor, Chemical & Biomolecular Engineering, Whiting School of Engineering, JHU

Justin Galloway (Predoctoral Fellow: 2007-2012)
Process Engineer, Novozymes

Doriane Sanseau (Exchange student: 2008-2012)
Postdoctoral Fellow, Institut Curie, Paris, France

Bill Diplas (Pre-doctoral/Masters student: 2010-2011)
Resident Physician, Memorial Sloan Kettering Cancer Center, New York, NY

Runchi Gao (Predoctoral Fellow: 2012-2013)
Jr. Faculty member, Kunming University, China

Ming (Michelle) Tang (Pre- and Postdoctoral Fellow: 2005-2014)
Bioinformatics Scientist, Department of Human Genetics, Medizinische Hochschule Hannover, Germany

Nghia Nguyen (Postdoctoral Fellow: 2012-2014)
Head, Genetic Laboratory, Center for Molecular Biomedicine, Ho Chi Minh City University of Medicine and Pharmacy, Vietnam

Kristen Swaney (Predoctoral Fellow: 2005-2012; Postdoctoral Fellow: 2012-2015)
Scientific Project Administrator, Department of Biomedical Engineering, The Johns Hopkins University

Huaqing Cai (Postdoctoral Fellow: 2007-2013; Research Associate: 2013-2015)
Awards: Helen Hay Whitney Postdoctoral Fellowship (2009-2012), Daniel Nathans Young Investigator Award, Johns Hopkins University (2014)
Assistant Professor, Institute of Biophysics, Chinese Academy of Sciences, Beijing, China

Chuan-Hsiang (Bear) Huang (Postdoctoral Fellow: 2008-2014; Research Associate: 2014-2016)
Award: Harold L. Plotnick Damon Runyon Cancer Research Foundation Fellowship 2009
Assistant Professor, Department of Pathology, Johns Hopkins University, Baltimore, MD

Yulia Artemenko (Postdoctoral Fellow: 2008-2014; Research Associate 214-2016)
Assistant Professor, Department of Biological Sciences, SUNY at Oswego, Oswego, NY

Thomas Lampert (Postdoctoral Fellow: 2012-2016; Research Associate: 2016-2017)
Field Application Scientist, BioTek Instruments, Inc., Winooski, VT

Marc Edwards (Postdoctoral Fellow: 2014-2018)
Award: The Johns Hopkins University Provost's Postdoctoral Diversity Fellowship FY2017
Assistant Professor of Biology, Amherst College, Amherst, MA

Yuchuan Miao (Predoctoral Fellow: 2012-2019)
Award: 2018 JHU Young Investigators' Day Award
Postdoctoral Fellow, Olivier Pourquié Lab, Harvard Medical School, Boston, MA

Xiaoguang Li (Predoctoral Fellow: 2016-2020)
Awards: 2019 JHU Young Investigators' Day Award (Bae Gyo Jung Award)
2020 AHA Fellowship
Sr. Scientist, AbbVie, Cambridge, MA

IN TRAINING:

Huiwang (David) Zhan	(Predoctoral Fellow: 2014-2020) (Postdoctoral Fellow: 2020-present)
Budri Abubaker-Sharif	(Predoctoral Fellow: 2015-present)
Zhihua Jiao	(Postdoctoral Fellow: 2017-present)
Tatsat Banerjee	(Predoctoral Fellow: 2017-present)
Dhiman Pal	(Postdoctoral Fellow: 2018-present)
Jonathan Kuhn	(Postdoctoral Fellow: 2019-present)
Yu Deng	(Master's Student: 2019-present)
Yiyan Lin	(Predoctoral Fellow: 2019-present)

GRANT SUPPORT (examples):

"Excitable Networks in Directed Cell Migration", \$660,000 direct costs per year				
NIH 1R35GM118177-01	2016-2021		score = 10	
"Temporal and Spatial Signaling in Chemotaxis"				
NIH GM034933-17-25	2011-2015		score = 10	(2%)
	2015-2016		score = 14	(3%)
"Temporal and Spatial Signaling in Chemotaxis"				
Includes ARRA administrative supplement, \$134,946 direct costs				
NIH GM034933-17-20	2003-2011	\$1,556,178	score = 138	(5.6%)
"Signaling Networks in Chemotaxis and Cytokinesis" --- MERIT Award				
NIH GM028007-26-30	2005-15	\$1,791,188	score = 102	(1.1%)
"Modeling of Chemotactic Sensing in Dictyostelium"				
NIH GM071920	2004-2008	\$289,401		
"G-Protein Linked Signaling Pathways in Chemotaxis"				
NIH GM28007-22-25	2001-05	\$1,239,840	score = 153	(6.1%)
BIOCOMPLEXITY: Mathematical and Biological Modeling of Cell Polarization				
NSF DMS-0083500	2000-05	\$ 42,774		
Alliance for Cellular Signaling				
NIH U54 GM62114	2000-05	\$ 60,810		

"Function and Regulation of Adenylyl Cyclases"				
NIH GM57874-01-04	1998-02	\$ 468,375	score = 130	(3%)
"G-Protein Signaling in Chemotaxis and Phagocytosis"				
NIH GM28007-18-23	1997-01	\$1,700,000	score = 140	(7%)
BCMB Training Grant, NIH GM-07445				
Principal Investigator	1997-02	\$6,800,000		
"Regulation of Adenylate Cyclases"				
ACS DB-1B	1996-98	\$ 194,000		
"Function and Regulation of G-Protein Coupled Receptors"				
NIH GM34933-09-12	1995-99	\$ 726,109	score = 129	(1.5%)
NIH GM34933-13-16	1999-03	\$ 939,161	score = 172	
NSF Multiuser Equipment 1995				
Grant for DNA Synthesizers		\$ 250,000		
"Adenylate Cyclases in Dictyostelium"				
ACS DB-1B	1994-96	\$ 198,000		
BCMB Training Grant, NIH GM-07445				
Principal Investigator	1992-97	\$4,892,926		
"cAMP Receptor Subtypes and Dictyostelium Development"				
NIH GM34933-04-08	1990-95	\$ 741,889	score = 115	
"Role of Signal Transduction in Dictyostelium Development"				
NIH GM28007-14-18	1993-97	\$1,246,193	score = 123	(0.5%)
"The Catalytic Subunit of the Adenylate Cyclase in Dictyostelium"				
ACS NP-60833	1990-92	\$ 175,000		
ACS DB-68112	1992-94	\$ 210,339		
"Role of Signal Transduction in Dictyostelium Development"				
NIH GM28007-09-13	1988-93	\$ 986,043	score = 118	
"Modification of cAMP Receptors in Dictyostelium"				
NSF PCM-8417094	1985-87	\$ 130,000		
NIH GM34933-01-03	1987-90	\$ 328,068	score = 135	
ACS JFRA	1981-84	\$ 54,000		
AHA EI	1984-89	\$ 175,000		
"cAMP Signals Mediating Aggregating in Dictyostelium"				
NIH GM28007-01-03	1980-83	\$ 159,553	score = 130	
NIH GM28007-04-08	1983-88	\$ 630,357	score = 116	

INVITED TALKS:

- 1980 Chemotaxis Workshop at ICN-UCLA meeting on Cell-Cell Regulation, Keystone
- 1981 EMBO and Max-Planck-Gesellschaft Workshop on Gene Expression and Membrane Changes, Tutzing, West Germany
- 1982 Gordon Conference on Sensory Transduction in Microorganisms, Ventura, CA
The Weizmann Institute in Rehovoth, Israel
School of Hygiene and Public Health, Johns Hopkins University
National Jewish Hospital and Research Center, Denver, CO
- 1983 Table Ronde on Chemotaxis sponsored by Roussel-UCLAF, Paris
Gordon Conference on Cyclic Nucleotides
Gordon Conference on Eucaryotic Regulatory Mechanisms
Oji Seminar on Gene Expression Recognition in the Cellular Slime Molds, Kyoto
Department of Biology, Princeton University, Princeton, NJ
Department of Biology, Georgetown University, DC
Department of Biochemistry, Temple University, Philadelphia, PA
Department of Biochemistry, York University, Toronto, Canada
Department of Biophysics, Johns Hopkins University, Baltimore, MD
- 1984 Gordon Conference on Sensory Transduction in Microorganisms, Oxnard, CA
Society of Experimental Zoologists Symposium, Philadelphia, PA
Cold Spring Harbor Symposium on Microbial Development
Gordon Conference on Cyclic Nucleotides, Meriden, NH
Gordon Conference on Eucaryotic Regulatory Mechanisms, Plymouth, VT
Department of Genetics and Development, University of Illinois, Urbana, IL
Department of Biochemistry, Stanford University, Stanford, CA
- 1985 Thirteenth Annual Aharon Katzir-Katchalsky Symposium on Sensing and Response in Microorganisms, Weizmann Institute, Rehovoth, Israel
Cold Spring Harbor Symposium #50 on Molecular Biology of Development
Gordon Conference on Second Messengers and Protein Phosphorylation
Department of Biology, University of Vermont, Burlington, VT
Department of Biochemistry, University of Tennessee, Nashville, TN
Department of Cell Biology, Stanford University Medical School, Stanford, CA
Department of Biology, University of California, San Diego, La Jolla, CA
Department of Biology, University of Pennsylvania, Philadelphia, PA
- 1986 UCLA Workshop on Molecular Mechanisms of Hormone Action, Lake Tahoe, CA
NATO Workshop on Molecular Mechanisms of Desensitization, The Netherlands
Howard Hughes Conference on Response and Adaptation, Miami, FL
Cold Spring Harbor Symposium on G-Proteins and Signal Transduction
Gordon Conference on Sensory Transduction in Microorganisms, Oxnard, CA
Gordon Conference on Biomathematics and Theoretical Biology,
(Presented by Peter Klein)
Gordon Conference on Biological Regulatory Mechanisms,

(Presented by Peter Klein)

- 1987 Gordon Conference on Biological Regulatory Mechanisms
 Wilhelm Pfeffer Symposium, Universität Tübingen, Germany
 UCLA Conference on Signal Transduction and Cytoskeleton, Lake Tahoe, CA
 Department of Cell Biology, Columbia University Medical School, New York, NY
 Department of Pharmacology, Texas Health Science Center, Dallas, TX
- 1988 Gordon Conference on Sensory Transduction in Microorganisms (Vice-Chairman)
 Cold Spring Harbor Symposium #53 on Molecular Biology of Signal Transduction
 Gordon Conference Second Messengers Protein Phosphorylation
 Gordon Conference on Molecular Genetics, Plymouth, VT
 Department of Biology, University of Iowa, Iowa City, IA
 Department of Biology, University of Utah, Salt Lake City, UT
 Department of Biochemistry, Washington State University, Seattle, WA
 Department of Biochemistry, Colorado State University, Fort Collins, CO
 NATO Conference on Theoretical Modeling of Biological Oscillations, Belgium
 American Society of Gravitational and Space Biology, Washington, DC
- 1989 Department of Biology, University of California, San Diego, CA
 Department of Biochemistry, University of California, Berkeley, CA
 British Society of Developmental Biology, St. Andrews, Scotland
 NATO Conference on Sensing and Response, The Netherlands
 Howard Hughes Workshop on cAMP-Dependent Protein Kinase, Airlie, VA
 Gordon Conference on Molecular Membrane Biology (Session Chairman)
 Society of General Physiologists, Woods Hole, MA
- 1990 Gordon Conference on Sensory Transduction Microorganisms, (Chairman)
 UCLA Symposium on Signal Transduction in Development, Steamboat, CO
 (presented by Maureen Pupillo)
 34th Annual Meeting of the Biophysical Society
 Laboratory of Molecular Biology, Institute of Neurology, NIH
 Department of Cell Biology and Anatomy, Johns Hopkins University
 Department of Cell Biology, University of Miami
 ASBMB Symposium, New Orleans, Louisiana
 Society of Development Biologists, Washington, D.C.
 FASEB Receptor Conference, Vermont
 Society of Cell Biologists, San Diego (Plenary Lecture)
 Gordon Conference on Animal Cells and Viruses (presented by Julia Sun)
 Department of Pharmacology, University of California, San Francisco, CA
- 1991 CSH Banbury Center Conference on Seven-Transmembrane Segment Receptors
 Department of Biology, California Institute of Technology, Pasadena, CA
 ASBMB Meeting, Atlanta
 Molecular Basis of Signal Transduction Symposium, SUNY, Stony Brook, New York
 Roussel UCLAF Symposium on Seven Transmembrane Domain Receptors Signal
 Transduction Mechanisms, Paris (presented by Robert Gundersen)
 Gordon Conference on Second Messengers and Protein Phosphorylation

- Gordon Conference on Molecular Pharmacology (Geoff Pitt)
 FASEB Conference on Protein Kinases, Copper Mountain, CO
 Department of Biochemistry, Vanderbilt University, Nashville, TN
 Gordon Conference on Hormone Action
 XVth European Symposium on Hormones and Cell Regulation, Mont Ste. Odile,
 Alsace, France (presented by Ron Johnson)
 G-Protein Conference, Lake Placid, New York
 The Thirteenth Edmond Rothschild School in Molecular Biophysics, "Chemotaxis of
 Cells and Unicellular Organisms", Israel (presented by Geoff Pitt)
- 1992 Department of Biochemistry, Penn State, College Park, PA
 Gordon Conference on Sensory Transduction in Microorganisms, Oxnard, CA
 BCMB Graduate Program, Washington University, St. Louis, MO
 Department of Cell Biology, Duke University, Durham, NC
 Department of Biochemistry, GLAXO
 Cold Spring Harbor Symposium on The Cell Surface
 Department of Biophysics, The Johns Hopkins University
 Department of Biochemistry, Northwestern University, Chicago, IL
 Department of Biochemistry, University of Chicago, Chicago, IL
 Department of Microbiology, University of Wisconsin, Milwaukee, WI
 Department of Biochemistry, Jefferson Medical School, Philadelphia, PA
- 1993 Department of Pharmacology, University of Washington, Seattle, WA
 Department of Biology, University of Delaware, Newark, DE
 Department of Cell and Development, Harvard University, Cambridge, MA
 Gruber Lecturer, University of Groningen, The Netherlands
 Department of Biology, University of Virginia, Charlottesville, VA
 Keystone Symposia on Molecular Genetic Controls of Microbial Differentiation,
 Tamarron, CO (Lijun Wu)
- 1994 Gordon Conference on Sensory Transduction in Microorganisms
 University of Georgia Winter Symposium, Athens, GA
 Givaudan-Roure Plenary Lecture, American Chemosensory Society, Sarasota, FL
 Department of Biochemistry, Case Western Reserve, Cleveland, OH
 EMBO Workshop on Molecular Techniques to Study Endocytosis, Cell Motility and
 Differentiation in Dictyostelium, Martinsried, Germany
 Gordon Conference on Hormone Action
 Mid-Atlantic Society for Developmental Biology Meeting, University of Pennsylvania
 Department of Pharmacology, Johns Hopkins University School of Medicine
- 1995 Keystone Symposia on Genetic Networks, Santa Fe, NM
 Keystone Symposia on Cancer Cell Invasion and Motility, Tamarron, CO
 Emory University Symposium on Signal Transduction, Atlanta, GA
 British Society of Developmental Biology, University of Kent, Canterbury, UK
 International Dictyostelium Conference, France (Carole Parent)
 Steenbock Symposium on Sensing and Response in Microorganisms, Madison, WI
 Ninth Conference on Second Messengers Phosphoproteins, Vanderbilt University
 School of Medicine (Symposium Speaker)

- Comprehensive Cancer Center, University of North Carolina, Chapel Hill
- 1996 Gordon Conference on Sensory Transduction in Microorganisms
 Keystone Symposia on Directed Cell Migration, Sante Fe, NM
 Department of Biophysics, New Jersey Medical School, New Brunswick, NJ
 Staples Lecture, University of Maine, Bangor, ME
 Ringberg Workshop on Endocytosis, Cell Motility, and Differentiation in
Dictyostelium
 Cellular and Molecular Medicine Seminar, Johns Hopkins University
 International Dictyostelium Conference, Japan (presented by Tian Jin)
- 1997 4th DBMS Workshop, Molecular Mechanisms of Cell Activation, Grenoble, France
 UCSD Beckman Symposium on Signal Transduction, La Jolla, CA
 Department of Biochemistry, Mt. Sinai, NY
 Department of Microbiology, University of Maryland
 Gordon Conference on Molecular Pharmacology, Ventura, CA
 Banting Best Institute, Toronto, Canada
 International Dictyostelium Conference, Snow Bird, UT
 International Conference on Signaling and Adhesion, Berlin, Germany
- 1998 Department of Molecular Biophysics, Yale University, New Haven, CT
 Department of Biology, Johns Hopkins University
 Department of Biological Chemistry, JHU School of Medicine
 Gordon Conference on Sensory Transduction Microorganisms
 Department of Molecular Biology and Genetics, Baylor University, Houston, TX
 Department of Neurobiology, University of Alabama at Birmingham, AL
 Gordon Conference on Chemotactic Cytokines
 International Conference on Dictyostelium, Munich, Germany
 Symposium Pattern Formation in Development, U of Minnesota, St Paul, MN
 Department of Pharmacology, Medical College of South Carolina, Charleston, SC
 Program Administrators, Rockledge Bldg., NIH
 Plenary Lecture, XIII Annual ECRO Congress, Siena, Italy
 Department of Marine Biology, University of Maryland
- 1999 Department of Biochemistry, Uniformed Services, Bethesda, MD
 Gordon Conference on Molecular Pharmacology
 Department of Biology, University of Missouri, Columbia,
 Department of Biology, University of Maryland, College Park, MD
 Merke, Sharpe, and Dhome, Rahway, NJ
 Symposium on Leukocyte Trafficking, American Association of Immunology, DC
 Department of Cell Biology, Duke University, Durham, NC
 BCMB Graduate Program, U. Washington, Seattle, WA
 Department of Pharmacology, U. Chicago, Chicago, IL
 Workshop on Genomics in Model Organisms (Carole Parent)
 International Dictyostelium Meeting, Bar Harbor ME
 University Lecture Series Southwestern Med Center, Dallas, TX
 Department of Pharmacology, UT Southwestern Med Center, Dallas, TX

- 2000 Gordon Conference on Sensory Transduction in Microorganisms
 UMBC Symposium Keynote Speaker
 Plenary Lecture, Japanese Dictyostelium Meeting, Tskuba
 ASPET Meeting, Boston, MA
 Society of Endocrinology, San Diego, CA
 Physiology Course, Marine Biological Laboratory, Wood's Hole, MA
 International Dictyostelium Meeting, Dundee
 BBV Foundation Meeting, Spain
 International Francqui Colloquium, Brussels, Belgium
 Millenium Pharmaceuticals, Cambridge
- 2001 Gordon Conference on Molecular Pharmacology, Ventura, CA
 Keystone Symposium on Molecular and Cellular Biology, Lake Tahoe, CA
 Keystone Symposium on Signaling Systems, Steamboat Springs, CO
 Department of Cell Biology and Anatomy, JHMI
 The Skirball Institute of Biomolecular Medicine, New York, NY
 NIH National Cancer Institute, Bethesda, MD
 Chicago Signal Transduction Symposium, Chicago, IL
 Alliance for Cellular Signaling Annual Meeting, Bethesda, MD
 Frontiers in Science Seminar Series, Stanford University
 Gordon Conference - Second Messengers & Protein Phosphorylation,
 New Hampshire
 Society for Developmental Biology, Seattle, WA
 International Dicty Conference, San Diego, CA
 The Myron Levine Lectureship, University of Michigan, Ann Arbor, MI
 Second International Conference on Systems Biology, Caltech
 Kenneth Sparks/Julia Fisher Lectureship, University of Connecticut
 International Conference of the DFG-MDC, Berlin, Germany
- 2002 Compass Workshop, San Francisco, CA
 Gordon Conference - Sensory Transduction, Ventura, CA
 Department of Clinical Immunology, Johns Hopkins University-Bayview
 NIH National Institute of Allergy and Infectious Diseases, Bethesda, MD
 Keystone Symposium on Cellular Motility and Signaling, Taos, New Mexico
 Distinguished Speaker Series, University of North Carolina-Chapel Hill
 Dept. of Cell & Dev. Bio., University of Pennsylvania, Philadelphia, PA
 Physiology Course, Marine Biological Laboratory, Wood's Hole, MA
 Annual Meeting for the Society for Cell Biology, San Francisco, CA
- 2003 Keystone Symposium on Chemokines and Chemokine Receptors, Breckenridge, CO
 Gordon Conference on Molecular Pharmacology, Ventura, CA
 Keystone Symposium on Dynamics of Cellular Organization, Taos, NM
 Center for Developmental Biology Symposium, Kobe, Japan
 EMBL Workshop on Mechanisms of Cell Migration, Heidelberg, Germany
 Discovery Seminar Series, University of Dundee, Scotland, UK
 62nd Annual Meeting of Society for Developmental Biology, Boston, MA
 CMB Distinguished Seminar Program, University of Alabama, Birmingham, AL
 MCDB Department Seminar Series, University of Texas at Austin, Austin, TX

- Cell Dynamics Distinguished Seminar Program, Univ. Mass. Med., Worcester, MA
 Division of Signal Transduction Seminar Series, Harvard University, Boston, MA
 GDB Seminar Series, University of Farmington Health Ctr., Farmington, CT
 1st Annual National Academies Keck Futures Initiative Conference, Irvine, CA
- 2004 1st International PTEN Meeting, Scottsdale, AZ
 Department of Pharmacology Seminar, Columbia University, NY, NY
 Developmental Biology Seminar, Memorial Sloan Kettering Cancer Center, NY, NY
 Plenary Lecture - USGEB 2004 Conference, Fribourg, Switzerland
 Cologne Spring Meeting 2004, Cologne, Germany
 Cell Migration Consortium, Herndon, VA
 IUBMB/ASBMB 2004, Boston, MA
 Plenary Lecture - 12th International Conference on Second Messengers & Phosphoproteins,
 Montreal, Canada
 International Dictyostelium Conference, Quebec, Canada
 Symposium of the Society of General Physiologists, Woods Hole, MA
- 2005 Keynote Speaker - 3rd TLL Life Sciences Symposium, Singapore
 Gordon Conference on "Gradient Sensing and Directed Cell Migration," Ventura, CA,
 Chair and Founder
 Dept. of Pharmacology and Cancer Biology Seminar, Duke University, Durham, NC
 Plenary Lecture, Keystone Symposia, Snowbird, UT
 Department of Embryology Seminar, Carnegie Institution of Washington, Baltimore, MD
 University of Birmingham, School of Biosciences, Birmingham, U.K.
 60th Annual Harden Conference, Ambleside, U.K.
 Department of Cell Biology, University of Virginia, Charlottesville, VA
 Department of Molecular Biology, Princeton University, Princeton, NJ
- 2006 Gordon Conference on "Sensory Transduction in Microorganisms," Ventura, CA
 2nd International PTEN Mtg., Cold Spring Harbor, Long Island, NY
 Emory University BCDB Graduate Program Symposium, Emory Univ., Atlanta, GA
 EMBL Workshop, Heidelberg, Germany
 G-Protein Signaling Workshop, Thomas Jefferson University, Philadelphia, PA
 Danny Thomas Lectureship, St. Jude Children's Research Hospital, Memphis, TN
 Santa Cruz Developmental Biology Conference, Santa Cruz, CA
 60th Annual Meeting of Society of General Physiologists, Woods Hole, MA
 Robert E. Davies Lecture, 15th Annual Retreat and Symposium, University of Pennsylvania,
 Philadelphia, PA
 Keynote Speaker, 7th Annual Great Lakes GPCR, Detroit, MI
- 2007 Gordon Conference on "Gradient Sensing and Directed Cell Migration," Ventura, CA
 Biophysical Society 57th Annual Meeting on "Molecular Mechanisms of Cell Migration,"
 Baltimore, MD
 Department of Molecular Biology and Genetics, Cornell University, Ithaca, NY
 Department of Materials Science & Engineering, Johns Hopkins University, Baltimore, MD
 Keynote Speaker, Gordon Conference on "Fibronectins, Integrins & Related Molecules," Il
 Ciocco, Italy
 Gordon Conference on "Phagocytes," New London, CT

- Keynote Speaker, Gordon Conference on "Phosphorylation and G-Protein Signaling Networks, Biddeford, ME
Janelia Farms "Inositide Signaling Symposium," Ashburn, VA
- 2008 Keystone Symposia on Cell Migration in Invasion & Inflammation, Taos, NM
IMA Workshop "Organization of Biological Networks, University of Minnesota, MN
97th International Titisee Conference, Titisee, Germany
University of Chicago Cell Physiology Seminar, Chicago, IL
TOR Conference - Fondation des Treilles, Nice, France
Cell Migration Consortium on "Frontiers in Cell Migration: from Mechanism to Disease, Bethesda, MD
- 2009 Carnegie Institute of Washington Seminar, Baltimore, MD
Gordon Conference on "Gradient Sensing and Directed Cell Migration," Galveston, TX
ASBMB 2009 Annual Meeting, New Orleans, LA
IUBMB International Congress, Shanghai, China
Annual Cell Migration Consortium, Bethesda, MD
International Conference on Cell & Tissue Polarity, Paris, France
- 2010 Stanford University Seminar, Palo Alto, CA
STIM Gordon Conference, Ventura, CA
3rd Singapore Lipid Symposium, Singapore
Cold Spring Harbor Laboratories PTEN Pathways and Targets, Cold Spring Harbor, NY
Keynote Speaker, Cold Spring Harbor Symposium Axon Guidance, Cold Spring Harbor, NY
- 2011 University of Illinois seminar, Dept. of Cell & Developmental Biology, Urbana, IL.
Frontiers in Cell Migration and Mechanotransduction Conference, NIH, Bethesda, MD
Gordon Conference on "Gradient Sensing and Directed Cell Migration," Switzerland
Gordon Conference on "Phagocytes," Davidson, NC
Gordon Conference on "Mechanisms of Cell Signaling," Lewiston, ME
Annual *Dictyostelium* Conference, Co-organizer, Baltimore, MD
Dartmouth Medical School Seminar, Dept. of Physiology, Lebanon, NH
Johns Hopkins University School of Med. Seminar, Dept. of Immunology, Balto., MD
- 2012 Plenary Speaker, Workshop on Cell Signaling and Cytoskeleton in Directed Cell Migration, Vanderbilt University, Nashville, TN
- 2013 Keynote Speaker, Gordon Research Conference on "Directed Cell Migration," Galveston, TX
Seminar Series, Institute of Genetic Medicine, Johns Hopkins University SOM
EMBO Spatial 2013 Conference on "Gradient Sensing and Directed Cell Migration," Israel
Annual *Dictyostelium* Conference, North Carolina
- 2014 FASEB Science Research Conference on "Phospholipid Cell Signaling & Metabolism in Inflammation & Cancer," Niagara Falls, NY
Cell & Developmental Biology Seminar Series, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA

- Developmental Genetics Symposium, New York University, New York, NY
- 2015 Gordon Research Conference on “Directed Cell Migration,” Galveston, TX
 Plenary Speaker on “Signal Transduction and Trafficking,” International Meeting of the German Society for Cell Biology (DGZ), Cologne, Germany
 Presenter, Seminar Series of the Biophysics Training Program at UNC, Chapel Hill
- 2016 Frontiers in Chemistry Seminar, Dept. of Chemistry and Biochemistry Colloquium Series, University of Toledo, Toledo, OH
 Endowed Chairs Seminar Series, Snyder Institute for Chronic Diseases, University of Calgary, Calgary, AB, Canada
 NIH Twinbrook Seminar Series, Rockville, MD
 FASEB Science Research Conference on “Phospholipid Signaling in Cancer, Neurodegeneration and Cardiovascular Disease,” Steamboat Springs, CO
- 2017 Gordon Research Conference on “Directed Cell Migration,” Galveston, TX
 Physical Sciences in Oncology Center Seminar Series, University of Pennsylvania, Philadelphia, PA
 Eminent Scholar Colloquia Series, University of Arizona, Tucson, AZ
 Postdoctoral Fellows Invited Speaker Series, NICHD-NIH, Division of Developmental Biology, Bethesda, MD
 Keynote Speaker, International *Dictyostelium* Conference, Geneva, Switzerland
 Inaugural Richard Goode Lecture, 2017-18 Molecular, Cellular and Developmental Biology Department Seminar Series, University of California, Santa Barbara
 4th ShanghaiTech-SIAIS BioForum, Shanghai, China
 Bei Shizhang Lecture on “Excitable Networks in Directed Cell Migration,” Institute of Biophysics, Chinese Academy of Sciences, Beijing, China
 ASCB / EMBO Annual Meeting, Special Interest Subgroup on “Spatial and temporal control of cell signaling,” Philadelphia, PA
- 2018 Computational Biology & Bioinformatics (CBB) Seminar Series, Duke University, Durham, NC
 FASEB Science Research Conference on “Phospholipids: Dynamic Lipid Signaling in Health and Disease,” Steamboat Springs, CO
 Annual *Dictyostelium* Conference 2018, Egmond aan Zee, The Netherlands
- 2019 Physiology, Biophysics and Systems Biology (PBSB) Seminar Series, Weill Cornell Medicine, New York, NY
 Gordon Research Conference on “Directed Cell Migration,” Galveston, TX
 Imaging Science and Cancer Biology Symposium, Hood College, Frederick National Laboratory for Cancer Research, Frederick, MD
 Pharmacology Seminar Series, University Michigan, Ann Arbor, MI
 E.B. Wilson Lecture ASCB meeting Washington, DC (2019)
- 2020 International Conference on cell and Experimental Biology (CEB), Virtual Conference, United Scientific Group, December 9-11

PUBLICATIONS

1. Fambrough DM and Devreotes PN. 1975. Synthesis and degradation of acetylcholine receptors in cultured chick skeletal muscle. In: *Exploratory Concepts in Muscular dystrophy II*. (Milhorat AT, ed.) Excerpta Medica, Amsterdam, pp. 55-67.
2. Devreotes PN and Fambrough DM. 1975. Acetylcholine receptor turnover in membranes of developing muscle fibers. *J Cell Biol.* 1975 May;65(2):335-58. doi: 10.1083/jcb.65.2.335.
3. Devreotes PN and Fambrough DM. 1976. Turnover of acetylcholine receptors in skeletal muscle. In: *Cold Spring Harbor Symposium on Quantitative Biology XL*, 40, 237-251.
4. Fambrough DM and Devreotes PN. 1976. Development of chemical excitability in skeletal muscle. In: *Biogenesis and Turnover of Membrane Molecules* (Cook J, ed.) Raven Press, NY.
5. Devreotes PN and Fambrough DM. 1976. Synthesis of acetylcholine receptors by cultured chick myotubes and denervated mouse extensor longus digitorum muscles. *Proc Natl Acad Sci U S A.* 1976 Jan;73(1):161-4. doi: 10.1073/pnas.73.1.161.
6. Devreotes PN. 1977. Acetylcholine. In: *McGraw-Hill Encyclopedia of Science and Technology* ((Lapides D, ed.).
7. Fambrough DM, Devreotes PN and Card DJ. 1977. The synthesis and degradation of acetylcholine receptors. In: *The Synapse* (Cottrell GA, ed.), Blackie & Sons Ltd., Glasgow, pp. 203-237.
8. Fambrough DM, Devreotes PN, Card DJ, Gardner J and Tepperman K. 1977. Metabolism of acetylcholine receptors in skeletal muscle. *Natl Cancer Inst Monogr.* 48, 277-294.
9. Devreotes PN, Card DJ, Tepperman KG and Fambrough DM. 1977. Studies on the metabolism of acetylcholine receptors in skeletal muscles. In: *Exploratory Concepts in Muscular Dystrophy III* (Rowland IP, ed.).
10. Devreotes PN, Gardner J and Fambrough DM. 1977. Kinetics of biosynthesis of acetylcholine receptors and subsequent incorporation into plasma membranes of cultured skeletal muscle. *Cell.* 1977 Mar;10(3):365-73. doi: 10.1016/0092-8674(77)90023-x.
11. Fambrough DM and Devreotes PN. 1978. Newly synthesized acetylcholine receptors are located in the Golgi. *J Cell Biol.* 1978;76:237-44.
12. Fambrough DM, Devreotes PN, Gardner JM and Card DJ. 1979. The life history of acetylcholine receptors. *Prog Brain Res.* 1979;49:325-34. doi: 10.1016/S0079-6123(08)64644-0.
13. Devreotes PN. 1976. Biosynthesis and degradation of acetylcholine receptors in developing embryonic myotubes. Ph.D. Thesis, Johns Hopkins University.
14. Fambrough DM, Card-Linden D, Devreotes PN, Gardner JM and Rotundo RL. 1979. On the regulation of the number and distribution of acetylcholine receptors in skeletal muscle. In: *Nerve Cells, Transmitters and Behavior* (Levi-Motaleni R and Chagas C, eds.) Elsevier Press.

15. Devreotes PN, Derstine PL and Steck TL. 1979. Cyclic 3',5'-AMP relay in *Dictyostelium discoideum*. I. A technique to monitor responses to controlled stimuli. *J Cell Biol.* 1979;80:291-9.
16. Devreotes P and Steck T. 1979. Cyclic 3',5'-AMP relay in *Dictyostelium discoideum*. II. Requirements for the initiation and termination of the response. *J Cell Biol.* 1979;80:300-9.
17. Dinauer MC, Mackay SA and Devreotes PN. 1980. Cyclic 3',5'-AMP relay in *Dictyostelium discoideum*. III. The relationship of cAMP synthesis and secretion during the cAMP signaling response. *J Cell Biol.* 1980;86:537-44.
18. Dinauer MC, Steck TL and Devreotes PN. 1980. Cyclic 3',5'-AMP relay in *Dictyostelium discoideum*. IV. Recovery of the cAMP signaling response after adaptation to cAMP. *J Cell Biol.* 1980;86:545-53.
19. Dinauer MC, Steck TL and Devreotes PN. 1980. Cyclic 3',5'-AMP relay in *Dictyostelium discoideum*. V. Adaptation of the cAMP signaling response during cAMP stimulation. *J Cell Biol.* 1980;86:554-61.
20. Tomchik KJ and Devreotes PN. 1981. Cyclic AMP waves in *Dictyostelium discoideum*: A demonstration by isotope dilution fluorography. *Science.* 1981 Apr 24;212(4493):443-6. doi: 10.1126/science.6259734. (COVER)
21. Devreotes PN. 1982. Chemotaxis. In: *The Development of Dictyostelium discoideum* (Loomis WF, ed.) Academic Press, San Diego, Chap. 4, pp. 117-168.
22. Devreotes PN. 1983. Cyclic nucleotides and cell-cell communication in *Dictyostelium discoideum*. *Advances in Cyclic Nucleotide Research*, Vol. 15, pp. 55-96.
23. Devreotes PN. 1983. The effect of folic acid on cAMP elicited cAMP production in *Dictyostelium discoideum*. *Dev Biol.* 1983 Jan;95(1):154-62. doi: 10.1016/0012-1606(83)90014-3.
24. Devreotes PN, Potel MJ and Mackay S. 1983. Quantitative analysis of cAMP waves mediating aggregation in *Dictyostelium discoideum*. *Dev Biol.* 1983 Apr;96(2):405-15. doi: 10.1016/0012-1606(83)90178-1.
25. Theibert A and Devreotes PN. 1983. Cyclic 3',5'-AMP relay in *Dictyostelium discoideum*. VI. Adaptation is independent of activation of adenylate cyclase. *J Cell Biol.* 1983 Jul;97(1):173-7. doi: 10.1083/jcb.97.1.173.
26. Fontana D and Devreotes P. 1984. cAMP-stimulated adenylate cyclase activation in *Dictyostelium* is inhibited by agents acting at the cell surface. *Dev Biol.* 1984 Nov;106(1):76-82. doi: 10.1016/0012-1606(84)90063-0.
27. Theibert A and Devreotes P. 1984. Adenosine and its derivatives inhibit the cyclic AMP signaling response in *Dictyostelium*. *Dev Biol.* 1984 Nov;106(1):166-73. doi: 10.1016/0012-1606(84)90072-1.

28. Theibert A, Klein P and Devreotes P. 1984. Specific photoaffinity labeling of the cAMP surface receptor in *Dictyostelium*. *J Biol Chem*. 1984; 259:12318-12321.
29. Fontana D, Wong T-Y, Theibert A and Devreotes P. 1984. Cell-cell interactions in the development of *Dictyostelium*. In: *The Cell Surface in Development and Cancer* (Steinberg MS, ed.) Plenum.
30. Chisholm R, Fontana D, Theibert A, Lodish H and Devreotes P. 1984. The development of *Dictyostelium discoideum*: Chemotaxis, cell-cell adhesion, and gene expression. In: *Microbial Development* (Losick R and Shapiro L, eds.) Cold Spring Harbor, NY, pp. 219-254.
31. Klein P, Theibert A, Fontana D and Devreotes P. 1985. Identification and cyclic AMP-induced modification of the cyclic AMP receptor in *Dictyostelium discoideum*. *J Biol Chem*. 1985 Feb 10;260(3):1757-64.
32. Devreotes P and Sherring J. 1985. Kinetics and concentration dependence of reversible cAMP induced modification of the surface cAMP receptor in *Dictyostelium*. *J Biol Chem*. 1985 May 25;260(10):6378-84.
33. Klein P, Fontana D, Knox B, Theibert A and Devreotes P. 1985. Cyclic AMP receptors controlling cell-cell interactions in the development of *Dictyostelium*. *Cold Spring Harb Symp Quant Biol*. 1985;50:787-99. doi: 10.1101/sqb.1985.050.01.097.
34. Segel L, Goldbeter A, Devreotes P and Knox B. 1986. A mechanism for exact sensory adaptation based on receptor modification. *J Theor Biol*. 1986 May 21;120(2):151-79. doi: 10.1016/s0022-5193(86)80171-0.
35. Theibert A, Palmisano M, Jastorff B and Devreotes P. 1986. The specificity of the cAMP receptor mediating activation of adenylate cyclases in *Dictyostelium discoideum*. *Dev Biol*. 1986 Apr; 114(2):529-33. doi: 10.1016/0012-1606(86)90216-2.
36. Berlot C, Spudich J and Devreotes P. 1985. Chemoattractant-elicited increases in myosin phosphorylation in *Dictyostelium*. *Cell*. 1985 Nov;43(1):307-14. doi: 10.1016/0092-8674(85)90036-4.
37. Segel L, Goldbeter A, Devreotes P and Knox B. 1985. A Mechanism for Exact Sensory Adaptation Based on Receptor Modification. In: *Sensing and Response in Microorganisms* (Proceeding of 13th Annual Aharon Katzir-Katchalsky Symposium, The Weizmann Institute, Rehovoth, Israel, March 17-22, 1985).
38. Fontana D, Wong T-Y, Theibert A and Devreotes P. 1986. Cell-cell interactions in the development of *Dictyostelium*. *Dev Biol* (N Y 1985). 1986;3:261-81. Review.
39. Knox B, Devreotes P, Goldbeter A and Segel L. 1986. A molecular mechanism for sensory adaptation based on ligand-induced receptor modification. *Proc Natl Acad Sci U S A* 1986 Apr; 83(8):2345-9. doi: 10.1073/pnas.83.8.2345.

40. Theibert A and Devreotes P. 1986. Surface receptor-mediated activation of adenylate cyclase in Dictyostelium: Regulation by guanine nucleotides in wild-type cells and aggregation deficient mutants. *J Biol Chem.* 1986 Nov 15; 261(32):15121-5.
41. Reymond C, Gomer R, Nellen W, Theibert A, Devreotes P and Firtel R. 1986. Phenotypic changes induced by a mutated ras gene during the development of Dictyostelium transformants. *Nature.* 1986 Sep 25-Oct 1;323(6086):340-3. doi: 10.1038/323340a0.
42. Devreotes P, Fontana D, Klein P, Sherring J and Theibert A. 1987. Transmembrane signalling in Dictyostelium. *Methods Cell Biol.* 1987;28:299-331. doi: 10.1016/s0091-679x(08)61653-2.
43. Klein P, Knox B, Borleis J and Devreotes P. 1987. Purification of the surface cAMP receptor in Dictyostelium. *J Biol Chem.* 1987; 262:352-7.
44. Klein P, Vaughan R, Borleis J and Devreotes P. 1987. The surface cyclic AMP receptor in Dictyostelium. *J Biol Chem.* 1987;262:358-64.
45. Vaughan R, Pupillo M, Theibert A, Klein P and Devreotes P. 1987. Surface receptor mediated activation and adaptation of adenylate cyclase in Dictyostelium. NATO Workshop on Receptor-Mediated Desensitization. In: *Molecular Mechanisms of Desensitization to Signal Molecules*, (Konijn TM, Van Haas PJM, Van der Staue H, Van der Wel H and Houslay MD, eds.) Springer-Verlag, Berlin, Series H: Cell Biology, Vol. 6, pp. 15-24.
46. Berlot C, Devreotes P and Spudich J. 1987. Chemoattractant-elicited increases in Dictyostelium myosin phosphorylation are due to changes in myosin localization and increases in kinase activity. *J Biol Chem.* 1987;262:3918-26.
47. Klein P, Theibert A and Devreotes P. 1988. Identification and ligand-induced modification of the cAMP receptor in Dictyostelium. *Methods Enzymol.* 1988;159:267-78. doi: 10.1016/0076-6879(88)59027-4.
48. Berlot CH, Devreotes PN and Spudich JA. 1988. Role of myosin phosphorylation in Dictyostelium chemotaxis. In: *Signal Transduction in Cytoplasmic Organization and Cell Motility (Proceedings UCLA Conference, Lake Tahoe, CA)*. Alan R. Liss, Inc., pp. 287-292.
49. Klein PS, Sun TL, Saxe CL III, Kimmel AR, Johnson RL and Devreotes PN. 1988. A chemoattractant receptor controls development in Dictyostelium discoideum. *Science.* 1988;241:1467-72.
50. Saxe CL, Klein P, Sun TJ, Kimmel A and Devreotes P. 1988. Structure and expression of the cAMP cell-surface receptor. *Dev Genet.* 1988;9(4-5):227-35. doi: 10.1002/dvg.1020090405.
51. Vaughan R and Devreotes P. 1988. Ligand-induced phosphorylation of the cAMP receptor from Dictyostelium discoideum. *J Biol Chem.* 1988;263:14538-43.
52. Pupillo M, Klein P, Vaughan R, Pitt G, Lilly P, Sun T, Devreotes P, Kumagai A and Firtel R. 1988. cAMP receptor and G-protein interactions control development in Dictyostelium. In: *Molecular Biology of Signal Transduction, Cold Spring Harbor Symposium, Vol. 53*, pp. 657-665.

53. Kumagai A, Mann S, Pupillo M, Pitt G, Devreotes P and Firtel R. 1988. A molecular analysis of G-proteins and control of early gene expression by the cell surface cAMP receptor in *Dictyostelium*. In: Molecular Biology of Signal Transduction, Cold Spring Harbor Symposium, Vol. 53, pp. 675-685.
54. Devreotes PN and Zigmond SH. 1988. Chemotaxis in eucaryotic cells: A focus on leukocytes and *Dictyostelium*. *Annu Rev Cell Biol.* 1988;4:649-86. doi: 10.1146/annurev.cb.04.110188.003245.
55. Wang M, Van Haastert PJM, Devreotes P and Schaap P. 1988. Localization of chemoattractant receptors on *Dictyostelium discoideum* cells during aggregation and down-regulation. *Dev Biol.* 1988 Jul;128(1):72-7. doi: 10.1016/0012-1606(88)90268-0.
56. Snaar-Jagalska BE, Devreotes PN and Van Haastert PJM. 1988. Ligand-induced modification of a surface cAMP receptor of *Dictyostelium discoideum* does not require its occupancy. *J Biol Chem.* 1988;263:897-901.
57. Pitt GS and Devreotes PN. 1988. A simple BASIC program allows the rapid entry of DNA nucleotide sequences into personal computers. *Biotechniques.* 1988 Feb;6(2):122-3.
58. Lilly P, Klein P, Theibert A, Vaughan R, Pupillo M, Saxe C, Kimmel A and Devreotes P. 1988. Receptor G-protein interactions in the development of *Dictyostelium*. *Bot Acta.* 1988 May; 101(2): 123-7.
59. Gundersen RE, Johnson R, Lilly P, Pitt G, Pupillo M, Sun T, Vaughan R and Devreotes PN. 1989. Reversible phosphorylation of G-protein-coupled receptors controls cAMP oscillations in *Dictyostelium*. In: Cell to Cell Signalling: From Experiments to Theoretical Models. Goldbeter A (ed.) Academic Press, London, pp. 477-486.
60. Kumagai A, Pupillo M, Gundersen R, Miaki-Lye R, Devreotes P and Firtel R. 1989. Regulation and function of $G\alpha$ protein subunits in *Dictyostelium*. *Cell.* 1989;57:265-75 (COVER).
61. Pupillo M, Kumagai A, Pitt GS, Firtel RA and Devreotes PN. 1989. Multiple α -subunits of guanine nucleotide-binding proteins in *Dictyostelium*. *Proc Natl Acad Sci U S A.* 1989 Jul;86(13):4892-6. doi: 10.1073/pnas.86.13.4892.
62. Devreotes P. 1989. *Dictyostelium discoideum*: A model system for cell-cell interactions in development. *Science.* 1989;245:1054-8.
63. Devreotes P. 1989. Cell-cell interactions in *Dictyostelium* development. *Trends Genet.* 1989 Aug;5(8):242-5. doi: 10.1016/0168-9525(89)90095-4.
64. Johnson RL, Gundersen R, Lilly P, Pitt G, Pupillo M, Sun TJ, Vaughan RA and Devreotes PN. 1989. G-protein-linked signal transduction systems control development in *Dictyostelium*. *Development.* 1989;107 Suppl:75-80.

65. Vaughan R, Johnson R, Caterina M and Devreotes P. 1989. Adaptation of chemoattractant elicited responses in *Dictyostelium discoideum*. NATO Conference on Sensing and Response, The Netherlands. In: Molecular Mechanisms of Desensitization to Signal Molecules (Konijn TM, et al., eds.) Springer-Verlag, Berlin, pp. 23-36.
66. Firtel R, Van Haastert P, Kimmel A and Devreotes P. 1989. G-protein linked signal transducing pathways in development: *Dictyostelium* as an experimental system. *Cell*. 1989 Jul 28;58(2):235-9. doi: 10.1016/0092-8674(89)90837-4.
67. Gundersen RE and Devreotes PN. 1990. *In vivo* receptor-mediated phosphorylation of a G protein in *Dictyostelium*. *Science*. 1990;248:591-3.
68. Sun TJ, Van Haastert PJM and Devreotes PN. 1990. Surface cAMP receptors mediate multiple responses during development in *Dictyostelium*: Evidenced by antisense mutagenesis. *J Cell Biol*. 1990;110:1549-54.
69. Pitt GS, Gundersen RE and Devreotes PN. 1990. Mechanisms of excitation and adaptation in *Dictyostelium*. *Semin Cell Biol*. 1990 Apr;1(2):99-104.
70. Pitt GS, Gundersen RE, Lilly PJ, Pupillo MB, Vaughan RA and Devreotes PN. 1990. G protein-linked signal transduction in aggregating *Dictyostelium*. *Soc Gen Physiol Ser*. 1990;45:125-31.
71. Saxe III, CL, Johnson RL, Devreotes PN and Kimmel AR. 1991. Expression of a cAMP receptor gene of *Dictyostelium* and evidence for a multigene family. *Genes Dev*. 1991 Jan;5(1):1-8. doi: 10.1101/gad.5.1.1.
72. Saxe CL, Johnson R, Devreotes PN and Kimmel AR. 1991. Multiple genes for cell surface cAMP receptors in *Dictyostelium discoideum*. *Dev Genet*. 1991;12(1-2):6-13. doi: 10.1002/dvg.1020120104.
73. Sun TJ and Devreotes PN. 1991. Gene targeting of the aggregation stage cAMP receptor cAR1 in *Dictyostelium*. *Genes Dev*. 1991 Apr;5(4):572-82. doi: 10.1101/gad.5.4.572.
74. Johnson RL, Vaughan RA, Caterina MJ, Van Haastert PJM and Devreotes PN. 1991. Overexpression of the cAMP receptor 1 in growing *Dictyostelium* cells. *Biochemistry*. 1991 Jul 16;30(28):6982-6. doi: 10.1021/bi00242a025.
75. Caterina MJ and Devreotes PN. 1991. Molecular insights into eucaryotic chemotaxis. *FASEB J*. 1991 Dec. 1;5(15):3078-85. doi: 10.1096/fasebj.5.15.1743439
76. Wu L and Devreotes PN. 1991. *Dictyostelium* transiently expresses eight distinct G-protein α -subunits during its developmental program. *Biochem Biophys Res Commun*. 1991 Sep 30; 179(3):1141-7. doi: 10.1016/0006-291x(91)91690-e.
77. Johnson RL, Van Haastert PJM, Kimmel AR, Saxe CL III, Jastorff B and Devreotes PN. 1992. The cyclic nucleotide specificity of three cAMP receptors in *Dictyostelium*. *J Biol Chem*. 1992;267: 4600-7.

78. Pitt GS, Milona N, Borleis J, Lin KC, Reed RR and Devreotes PN. 1992. Structurally distinct and stage-specific adenylyl cyclase genes play different roles in *Dictyostelium* development. *Cell*. 1992; 69:305-15.
79. Van Haastert PJM, Wang M, Bominaar AA, Devreotes PN and Schaap P. 1992. cAMP-induced desensitization of surface cAMP receptors in *Dictyostelium*: Different second messengers mediate receptor phosphorylation, loss of ligand binding, degradation of receptor, and reduction of receptor mRNA levels. *Mol Biol Cell*. 1992 Jun;3(6):603-12. doi: 10.1091/mbc.3.6.603.
80. Hereld D and Devreotes PN. 1992. The cAMP receptor family of *Dictyostelium*. In: *Molecular Biology of Receptors and Transporters: Receptors* (Friedlander M and Mueckler M, eds.), Vol.137B of *International Review of Cytology*, Academic Press, Orlando, FL, pp. 35-47.
81. Pupillo M, Insall R, Pitt GS and Devreotes PN. 1992. Multiple cyclic AMP receptors are linked to adenylyl cyclase in *Dictyostelium*. *Mol Biol Cell*. 1992;3:1229-34.
82. Johnson RL, Gundersen R, Hereld D, Pitt GS, Tugendreich S, Saxe CL, Kimmel AR and Devreotes PN. 1992. G-protein-linked signaling pathways mediate development in *Dictyostelium*. In: *The Cell Surface*, Vol. 57, Cold Spring Harbor Symp., Cold Spring Harbor Press, pp. 169-176.
83. Wu L, Gaskins C, Gundersen R, Hadwiger JA, Johnson RL, Pitt GS, Firtel RA and Devreotes PN. 1993. Signal transduction by G-proteins in *Dictyostelium discoideum*. In: *Handbook of Experimental Pharmacology*, "GTPases in Biology II" (Dickey B and Birnbaumer L, eds.), Vol. 108, Springer-Verlag, pp. 335-349.
84. Van Haastert PJM and Devreotes PN. 1993. Biochemistry and genetics of sensory transduction in *Dictyostelium*. In: *Signal Transduction: Prokaryotic and Simple Eukaryotic Systems* (Kurjan J and Taylor BL, eds.), Academic Press (Review), Orlando, FL., pp. 329-352.
85. Saxe CL III, Ginsberg GT, Louis JM, Johnson R, Devreotes PN and Kimmel AR. 1993. cAR2, a prestalk cAMP receptor required for normal tip formation and late development of *Dictyostelium discoideum*. *Genes Dev*. 1993;7:262-72. (COVER)
86. Johnson R, Saxe CL III, Gollop, Kimmel AR and Devreotes PN. 1993. Identification and targeted gene disruption of cAR3, a cAMP receptor subtype expressed during multicellular stages of *Dictyostelium* development. *Genes Dev*. 1993;7:273-82.
87. Milne J and Devreotes PN. 1993. The surface cyclic AMP receptors, cAR1, cAR2, and cAR3, promote Ca²⁺ influx in *Dictyostelium discoideum* by a Gα2-independent mechanism. *Mol Biol Cell*. 1993;4:283-92.
88. Lilly P, Wu L, Welker DL and Devreotes PN. 1993. A G-protein β-subunit is essential for *Dictyostelium* development. *Genes Dev*. 1993;7:986-995.
89. Pitt GS, Brandt R, Lin KC, Devreotes PN and Schaap P. 1993. Extracellular cAMP is sufficient to restore developmental gene expression and morphogenesis in *Dictyostelium* cells lacking the aggregation adenylyl cyclase (ACA). *Genes Dev*. 1993;7:2172-2180.

90. Caterina MJ, Milne JLS and Devreotes PN. 1994. Mutation of the third intracellular loop of the cAMP receptor, cAR1, of *Dictyostelium* yields mutants impaired in multiple signaling pathways. *J Biol Chem.* 1994;269:1523-32.
91. Devreotes PN. 1994. G-protein linked signaling pathways control the developmental program of *Dictyostelium*. *Neuron.* 1994 Feb;12(2):235-41. doi: 10.1016/0896-6273(94)90267-4.
92. Hereld D, Vaughan R, Kim J-Y, Borleis J and Devreotes P. 1994. Localization of ligand-induced phosphorylation sites to serine clusters in the C-terminal domain of the *Dictyostelium* cAMP receptor, cAR1. *J Biol Chem.* 1994;269:7036-44.
93. Lilly P and Devreotes PN. 1994. Identification of CRAC, a cytosolic protein required for guanine nucleotide stimulation of adenylyl cyclase in *Dictyostelium*. *J Biol Chem.* 1994;269:14123-9.
94. Wu L, Gaskins C, Zhou K, Firtel RA and Devreotes PN. 1994. Cloning and targeted mutations of $G\alpha 7$ and $G\alpha 8$, two developmentally regulated G protein α -subunit genes in *Dictyostelium*. *Mol Biol Cell.* 1994;5:691-702.
95. Insall RH, Soede RDM, Schaap P and Devreotes PN. 1994. Two cAMP receptors activate common signalling pathways in *Dictyostelium*. *Mol Biol Cell.* 1994;5:703-11.
96. Insall R, Kuspa A, Lilly PJ, Shaulsky G, Levin LR, Loomis WF and Devreotes PN. 1994. CRAC, a cytosolic protein containing a pleckstrin homology domain, is required for receptor and G protein-mediated activation of adenylyl cyclase in *Dictyostelium*. *J Cell Biol.* 1994;126:1537-45.
97. Soede RDM, Insall RH, Devreotes PN and Schaap P. 1994. Extracellular cAMP can restore development in *Dictyostelium* cells lacking one, but not two, subtypes of early cAMP receptors (cARs). *Development.* 1994;120:1997-2002.
98. Chen M-Y, Devreotes PN and Gundersen RE. 1994. Serine-113 is the site of receptor-mediated phosphorylation of the *Dictyostelium* G protein α -subunit, $G\alpha 2$. *J Biol Chem.* 1994;269:20925-30.
99. Mann SKO, Devreotes PN, Elliott S, Jermyn K, Kuspa A, Fechheimer M, Furukawa R, Parent CA, Segall J, Shaulsky G, Vardy PH, Williams J, Williams KL and Firtel RA. 1994. Cell biological, molecular genetic, and biochemical methods to examine *Dictyostelium*. *In: Cell Biology: A Laboratory Handbook, Vol. 1* (Celis JE, ed.) Academic Press, San Diego, pp. 412-451.
100. Kim, J-Y and Devreotes PN. 1994. Random chimeragenesis of G-protein coupled receptors: mapping the affinity of the cAMP chemoattractant receptors in *Dictyostelium*. *J Biol Chem.* 1994; 269:28724-31.
101. Caterina M, Hereld D and Devreotes PN. 1995. Occupancy of the *Dictyostelium* cAMP receptor, cAR1, induces a reduction in affinity which depends upon COOH-terminal serine residues. *J Biol Chem.* 1995;270:4418-23.
102. Milne JLS, Wu L, Caterina MJ and Devreotes PN. 1995. Seven helix cAMP receptors stimulate Ca^{2+} entry in the absence of functional G proteins in *Dictyostelium*. *J Biol Chem.* 1995;270:5926-31.

103. Parent C and Devreotes PN. 1995. Molecular dissection of G protein-mediated signal transduction using random mutagenesis in *Dictyostelium*. *Methods in Molecular Genetics* (Adolph KW, ed.), Academic Press, Orlando, FL, pp. 3-15 (COVER).
104. Lilly PJ and Devreotes PN. 1995. Chemoattractant and GTP γ S mediated stimulation of adenylyl cyclase in *Dictyostelium* requires translocation of CRAC to membranes. *J Cell Biol.* 1995;129:1659-65.
105. Wu L, Valkema R, Van Haastert PJM and Devreotes PN. 1995. The G-protein β -subunit is essential for multiple responses to chemoattractants in *Dictyostelium*. *J Cell Biol.* 1995;129:1667-75.
106. Caterina M, Devreotes PN, Borleis J and Hereld D. 1995. Agonist-induced loss of ligand binding is correlated with phosphorylation of cAR1, a G protein-coupled chemoattractant receptor from *Dictyostelium*. *J Biol Chem.* 1995;270:8667-72.
107. Parent CA and Devreotes PN. 1995. Isolation of inactive and G protein-resistant adenylyl cyclase mutants using random mutagenesis. *J Biol Chem.* 1995;270:22693-6.
108. Chen M-Y, Insall RH and Devreotes PN. 1996. Signaling through chemoattractant receptors in *Dictyostelium*. *Trends Genet.* 1996 Feb;12(2):52-7. doi: 10.1016/0168-9525(96)81400-4. (COVER)
109. Parent CA and Devreotes PN. 1996. Molecular genetics of signal transduction in *Dictyostelium*. *Annu Rev Biochem.* 1996;65:411-40. doi: 10.1146/annurev.bi.65.070196.002211.
110. Milne JLS, Kim J-Y and Devreotes PN. 1996. Chemoattractant receptor signaling: G protein-dependent and -independent pathways. In: *Signal Transduction in Health and Disease* (Corbin J and Francis S, eds.), Raven Press.
111. Insall R, Borleis J and Devreotes PN. 1996. The *aimless* RasGEF is required for processing of chemotactic signals through G-protein-coupled receptors in *Dictyostelium*. *Curr Biol.* 1996 Jun 1;6(6):719-29. doi: 10.1016/s0960-9822(09)00453-9. (COVER)
112. Maeda M, Aubry L, Devreotes P and Firtel R. 1996. Receptor mediated activation of a MAPK: Role of G proteins. *J Biol Chem.* 1996;271:3351-4.
113. Kim J-Y, Haastert PV and Devreotes P. 1996. Social senses: G-protein coupled receptor signaling pathways in *Dictyostelium discoideum*. *Chem Biol.* 1996 Apr;3(4):239-43. doi: 10.1016/s1074-5521(96)90103-9. (COVER)
114. Parent C and Devreotes PN. 1996. Constitutively active adenylyl cyclase mutant requires neither G proteins nor cytosolic regulators. *J Biol Chem.* 1996;271:18333-6.
115. van Es S, Virdy KJ, Pitt GS, Meima M, Sands TW, Devreotes PN, Cotter DA, Schaap P. 1996. Adenylyl cyclase G, an osmosensor controlling germination of *Dictyostelium* spores. *J Biol Chem.* 1996;271(39):23623-5.

116. Xiao Z and Devreotes PN. 1997. Identification of detergent-resistant plasma membrane microdomains in *Dictyostelium*: Enrichment of signal transduction proteins. *Mol Biol Cell*. 1997;8:855-69.
117. Milne JLS, Caterina MJ and Devreotes PN. 1997. Random mutagenesis of the cAMP chemoattractant receptor, cAR1, of *Dictyostelium*: Evidence for multiple states of activation. *J Biol Chem*. 1997;272:2069-76.
118. Kim J-Y, Caterina MJ, Milne JLS, Lin KC, Borleis JA and Devreotes PN. 1997. Random mutagenesis of the chemoattractant receptor, cAR1 of *Dictyostelium*: Mutant classes that cause discrete shifts in agonist affinity and lock the receptor in a novel activational intermediate. *J Biol Chem*. 1997;272:2060-8.
119. Aubry L, Maeda M, Insall R, Devreotes PN and Firtel RA. 1997. The *Dictyostelium* mitogen-activated protein kinase ERK2 is regulated by Ras and cAMP-dependent protein kinase (PKA) and mediates PKA function. *J Biol Chem*. 1997;272:3883-6.
120. Zigmond SH, Joyce M, Borleis J, Bokoch GM and Devreotes P. 1997. Regulation of actin polymerization in cell-free systems by GTP γ S and Cdc42. *J Cell Biol*. 1997;138:363-74.
121. Kim J-Y, Soede RDM, Schaap P, Valkema R, Borleis JA, Van Haastert PJM., Devreotes PN and Hereld D. 1997. Phosphorylation of chemoattractant receptors is not essential for chemotaxis or termination of G-protein-mediated responses. *J Biol Chem*. 1997;272:27313-8.
122. Xiao Z, Zhang N, Murphy DB and Devreotes PN. 1997. Dynamic distribution of chemoattractant receptors in living cells during chemotaxis and persistent stimulation. *J Cell Biol*. 1997;139:365-74.
123. Chen M-Y, Long Y and Devreotes PN. 1997. A novel cytosolic regulator, Pianissimo, is required for chemoattractant receptor and G protein-mediated activation of the twelve transmembrane domain adenylyl cyclase in *Dictyostelium*. *Genes & Dev*. 1997;11:3218-31. doi:10.1101/gad.11.23.3218.
124. Mann KO, Brown JM, Briscoe C, Parent C, Pitt G, Devreotes PN, and Firtel RA. 1997. Role of cAMP-dependent protein kinase in controlling aggregation and postaggregative development in *dictyostelium*. *Dev Biol*. 1997;183:208-21.
125. Kim J-Y, Borleis JA and Devreotes PN. 1998. Switching of chemoattractant receptors programs development and morphogenesis in *Dictyostelium*: Receptor subtypes activate common responses at different agonist concentrations. *Dev Biol*. 1998;197:117-28.
126. Jin T, Soede R, Liu J, Kimmel A, Devreotes PN and Schaap P. 1998. Temperature-sensitive G β discriminate between G protein-dependent and -independent signaling mediated by serpentine receptors. *EMBO J*. 1998 Sep 1;17(17):5076-84. doi: 10.1093/emboj/17.17.5076.

127. Peracino B, Borleis J, Jin T, Westphal M, Schwartz J-M, Wu L, Bracco E, Gerisch G, Devreotes PN and Bozarro S. 1998. G protein β -subunit-null mutants are impaired in phagocytosis and chemotaxis due to inappropriate regulation of the actin cytoskeleton. *J Cell Biol.* 1998;141:1529-37.
128. Verkerke-Van Wijk I, Kim J-Y, Brandt R, Devreotes PN and Schaap P. 1998. Functional promiscuity of gene regulation by serpentine receptors in *Dictyostelium discoideum*. *Mol Cell Biol.* 1998 Oct;18(10):5744-9. doi: 10.1128/mcb.18.10.5744.
129. Jin T, Amzel M, Devreotes PN and Wu C. 1998. Selection of G β subunits with point mutations that fail to activate specific signaling pathways *in vivo*: dissecting cellular responses mediated by a heterotrimeric G-protein in *Dictyostelium discoideum*. *Mol Biol Cell.* 1998 Oct;9(10):2949-61. doi: 10.1091/mbc.9.10.2949.
130. Parent C, Blacklock B, Froelich W, Murphy D, Devreotes PN. 1998. G protein signaling events are activated at the leading edge of chemotactic cells. *Cell.* 1998 Oct 2;95(1):81-91. doi:10.1016/s0092-8674(00)81784-5.
131. Xiao Z, Yao Y, Long Y and Devreotes PN. 1999. Desensitization of G-protein-coupled Receptor - agonist-induced phosphorylation of the chemottractant receptor for cAR1 lowers its intrinsic affinity for cAMP. *J Biol Chem.* 1999;274:1440-8.
132. Vithalani KK, Parent CA, Thorn EM, Penn M, Larochelle DA, Devreotes PN and De Lozanne A. 1998. Identification of darlin, a *Dictyostelium* protein with armadillo-like repeats that binds to small GTPases and is important for the proper aggregation of developing cells. *Mol Biol Cell.* 1998; 9:3095-106.
133. van Es S and Devreotes PN. 1999. Molecular basis of localized signal responses during chemotaxis in amoebae and leukocytes. *Cell Mol Life Sci.* 1999 Aug 15;55(10):1341-51. doi: 10.1007/s000180050374.
134. Parent C and Devreotes PN. 1999. A cell's sense of direction. *Science.* 1999 Apr 30;284(5415):765-770. doi: 10.1126/science.284.5415.765.
135. Parent C, Xiao Z, Zhang N and Devreotes PN. 1999. "Chemotaxis in Eucaryotic Cell" in *GFP in Motion* (CD edited by Beat Ludin).
136. Devreotes PN and International D. discoideum Organizing Committee. 1999. "*D. discoideum*: Model System in Motion". Promotional Web Site for Dictyostelium <www.hopkinsmedicine.org/dictyostelium>.
137. Jin T, Zhang N, Long Y, Parent C and Devreotes PN. 2000. Localization of the G protein $\beta\gamma$ complex in living cells during chemotaxis. *Science.* 2000;287:1034-6.
138. Garcia MX, Foote C, van Es S, Devreotes PN, Alexander S and Alexander H. 2000. Differential developmental expression and cell type specificity of dictyostelium catalases and their response to oxidative stress and UV-light. *Biochim Biophys Acta.* 2000 Jul 24;1492(2-3):295-310. doi: 10.1016/s0167-4781(00)00063-4.

139. Patel H, Guo K, Parent C, Gross J, Devreotes PN and Weijer CJ. 2000. A temperature-sensitive adenylyl cyclase mutant of *Dictyostelium*. *EMBO J*. 2000 May 15;19(10):2247-56. doi: [10.1093/emboj/19.10.2247](https://doi.org/10.1093/emboj/19.10.2247).
140. van Es S, Wessels D., Soll D, Borleis J and Devreotes PN. 2001. Tortoise, a novel mitochondrial protein, is required for directional responses of *Dictyostelium* in chemotactic gradients. *J Cell Biol*. 2001 Feb 5;152(3):621-32. doi: [10.1083/jcb.152.3.621](https://doi.org/10.1083/jcb.152.3.621). PMID: [PMC2196008](https://pubmed.ncbi.nlm.nih.gov/12196008/)
141. Janetopoulos C, Jin T and Devreotes PN. 2001. Receptor mediated activation of heterotrimeric G-proteins in living cells. *Science*. 2001 Mar 23;291(5512):2408-11. doi: [10.1126/science.1055835](https://doi.org/10.1126/science.1055835).
142. Briscoe C, Moniakis J, Kim J-Y, Brown J, Hereld D, Devreotes PN and Firtel R. 2001. The phosphorylated C-terminus of cAR1 plays a role in cell-type-specific gene expression and STATa tyrosine phosphorylation. *Dev Biol*. 2001 May 1;233(1):225-36. doi: [10.1006/dbio.2001.0217](https://doi.org/10.1006/dbio.2001.0217)
143. Weiner OD, Servant G, Parent CA, Devreotes PN and Bourne HR. 2000. Cell polarity in response to chemoattractants, *in* Cell polarity (Drubin, DG, ed). *Frontiers in Molecular Biology* (Hames BD and Glover DM, eds.) Oxford University Press, pp. 201-239.
144. van Es S, Weenings KE and Devreotes PN. 2001. The protein kinase YakA regulates G-protein-linked signaling responses during growth and development of *Dictyostelium*. *J Biol Chem*. 2001 Aug 17;276(33):30761-5. doi: [10.1074/jbc.M103365200](https://doi.org/10.1074/jbc.M103365200)
145. Verkerke-van Wijk I, Fukuzawa M, Devreotes PN and Schaap P. 2001. Adenylyl cyclase A expression is tip-specific in *Dictyostelium* slugs and directs StatA nuclear translocation and CudA gene expression. *Dev Biol*. 2001 Jun 1;234(1):151-60. doi: [10.1006/dbio.2001.0232](https://doi.org/10.1006/dbio.2001.0232)
146. Dormann D, Kim J-Y, Devreotes PN and Weijer CJ. 2001. cAMP receptor affinity controls wave dynamics, geometry and morphogenesis in *Dictyostelium*. *J Cell Sci*. 2001 Jul;114(Pt 13):2513-23.
147. Zhang N, Long Y and Devreotes PN. 2001. G γ in *Dictyostelium*: Its role in localization of G $\beta\gamma$ to the membrane is required for chemotaxis in shallow gradients. *Mol Biol Cell*. 2001 Oct;12(10):3204-13. doi: [10.1091/mbc.12.10.3204](https://doi.org/10.1091/mbc.12.10.3204). PMID: [PMC60167](https://pubmed.ncbi.nlm.nih.gov/12160167/)
148. Parent C, Borleis J and Devreotes PN. 2002. Regulation of adenylyl cyclases by a region outside the minimally functional cytoplasmic domains. *J Biol Chem*. 2002;277(2):1354-1360.
149. Ueda M, Sako Y, Tanaka T, Devreotes P and Yanagida T. 2001. Single molecule analysis of chemotactic signaling in *Dictyostelium* cells. *Science*. 2001 Oct 26;294(5543):864-7. doi: [10.1126/science.1063951](https://doi.org/10.1126/science.1063951)
150. Bankir L, Ahloulay M, Devreotes PN and Parent CA. 2002. Extracellular cAMP inhibits proximal reabsorption: are plasma membrane cAMP receptors involved? *Am J Physiol Renal Physiol*. 2002;282(3):F376-92. doi: [10.1152/ajprenal.00202.2001](https://doi.org/10.1152/ajprenal.00202.2001)

151. Zhao M, Jin T, McCaig C, Forrester J and Devreotes PN. 2002. Genetic analysis of the role of G protein-coupled receptor signaling in electrotaxis. *J Cell Biol.* 2002;157(6):921-927.
152. Janetopoulos C and Devreotes PN. 2002. Monitoring receptor mediated activation of heterotrimeric G-proteins by fluorescence resonance energy transfer. *Methods.* 2002 Aug;27(4):366-73. doi: [10.1016/s1046-2023\(02\)00095-6](https://doi.org/10.1016/s1046-2023(02)00095-6)
153. Iijima M and Devreotes PN. 2002. Tumor suppressor PTEN mediates sensing of chemoattractant gradients. *Cell.* 2002;109:599-610 (Cover). doi: [10.1016/s0092-8674\(02\)00745-6](https://doi.org/10.1016/s0092-8674(02)00745-6). PMID: 12062103.
154. Zhang N, Long Y and Devreotes PN. 2002. Ege A, a novel C2 domain containing protein, is essential for GPCR-mediated gene expression in *Dictyostelium*. *Dev Biol.* 2002 Aug 1;248(1):1-12. doi: [10.1006/dbio.2002.0715](https://doi.org/10.1006/dbio.2002.0715).
155. Dormann D, Weijer G, Parent CA, Devreotes PN and Weijer CJ. 2002. Visualizing PI3 kinase-mediated cell-cell signaling during *Dictyostelium* development. *Curr Biol.* 2002 Jul 23;12(14):1178-88. doi: [10.1016/s0960-9822\(02\)00950-8](https://doi.org/10.1016/s0960-9822(02)00950-8).
156. Iijima M, Huang E, and Devreotes PN 2002. Temporal and spatial regulation of chemotaxis. *Dev Cell.* 2002 Oct;3(4):469-78. doi: [10.1016/s1534-5807\(02\)00292-7](https://doi.org/10.1016/s1534-5807(02)00292-7).
157. Pergolizzi B, Peracino B, Silverman J, Ceccarelli A, Noegel A, Devreotes PN and Bozzaro S. 2002. Temperature-sensitive inhibition of development in *Dictyostelium* due to a point mutation in the *piaA* gene. *Dev Biol.* 2002;251:18-27.
158. Gilman AG, Devreotes PN, et al. 2002. Overview of the Alliance for Cellular Signaling. *Nature.* 2002;420:703-706.
159. Huang E, Iijima M, Parent CA, Funamoto S, Firtel R and Devreotes PN. 2003. Receptor-mediated regulation of PI3Ks confines PI(3,4,5)P₃ to the leading edge of chemotaxing cells. *Mol Biol Cell.* 2003 May;14(5):1913-22. doi: [10.1091/mbc.e02-10-0703](https://doi.org/10.1091/mbc.e02-10-0703).
160. Devreotes PN and Janetopoulos C. 2003. Eukaryotic chemotaxis: distinctions between directional sensing and polarization. *J Biol Chem.* 2003 Jun 6;278(23):20445-20448. doi: [10.1074/jbc.R300010200](https://doi.org/10.1074/jbc.R300010200).
161. Landree MA and Devreotes PN. 2004. Analyzing chemotaxis using *Dictyostelium discoideum* as a model system. *Methods in Molecular Biology* 239:91-104. *Methods Mol Biol.* 2004;239:91-104. doi: [10.1385/1-59259-435-2:91](https://doi.org/10.1385/1-59259-435-2:91)
162. Luo HR, Huang YE, Chen, JC, Saiardi A, Iijima M, Ye K, Huang Y, Nagata E, Devreotes PN and Snyder SH. 2003. Inositol pyrophosphates mediate chemotaxis in *Dictyostelium* via pleckstrin homology domain-PtdIns(3,4,5)P₃ interactions. *Cell.* 2003;114(5):559-572.
163. Chen L, Janetopoulos C, Huang YE, Iijima M, Borleis J and Devreotes PN. 2003. Two phases of actin polymerization display different dependences on PI(3,4,5)P₃ accumulation and have unique roles during chemotaxis. *Mol Biol Cell.* 2003;14(12):5028-5037.

164. Manahan CL and Devreotes PN. 2003. $\beta\gamma$ signaling in chemotaxis. In: Handbook of Cell Signaling (Bradshaw R and Dennis E, eds.). Academic Press, San Diego, CA, Vol. 2, Chapter 227, pp. 645-649.
165. Kutscher B, Devreotes PN and Iglesias PA. 2004. Local excitation, global inhibition mechanism for gradient sensing: An interactive applet. Sci STKE. 2004 Feb 3;2004(219):pl3. doi: 10.1126/stke.2192004pl3.
166. Iijima M, Huang YE, Luo HR, Vazquez F and Devreotes PN. 2004. Novel mechanism of PTEN regulation by its Phosphatidylinositol 4,5-bisphosphate binding motif is critical for chemotaxis. J Biol Chem. 2004;279(16):16606-16613.
167. Hereld D and Devreotes PN. 2004. Cyclic AMP Receptors of *Dictyostelium*. Encyclopedia of Biological Chemistry. (Lennarz WJ and Lane MD, eds.), Elsevier, Oxford, Vol.1, pp. 488-493.
168. Montell C and Devreotes PN. 2004. Annual Review on Cell Regulation - From protein dynamics to animal behavior: new insights into complex cell regulatory mechanisms. Curr Opin Cell Biol. 2004 Apr;16(2):115-8. doi: 10.1016/j.ceb.2004.02.011.
169. Janetopoulos C, Ma L, Devreotes PN and Iglesias PA. 2004. Chemoattractant-induced phosphatidylinositol 3,4,5-trisphosphate accumulation is spatially amplified and adapts, independent of the actin cytoskeleton. Proc Natl Acad Sci U S A. 2004 Jun 15;101(24):8951-6. doi: 10.1073/pnas.0402152101.
170. Hynes TR, Tang L, Mervine SM, Sabo JL, Yost EA, Devreotes PN and Berlot CH. 2004. Visualization of G-protein $\beta\gamma$ dimers using bimolecular fluorescence complementation demonstrates roles for both β and γ in subcellular targeting. J Biol Chem. 2004;279(29):30279-30286.
171. Van Haastert PJ. and Devreotes PN. 2004. Chemotaxis: signaling the way forward. Nat Rev Mol Cell Biol. 2004 Aug;5(8):626-34. doi: 10.1038/nrm1435.
172. Franca-Koh J and Devreotes PN. 2004. Moving forward: mechanisms of chemoattractant gradient sensing. Physiology (Bethesda). 2004 Oct;19:300-8. doi: 10.1152/physiol.00017.2004.
173. Manahan CL, Iglesias PA, Long Y and Devreotes PN. 2004. Chemoattractant signaling in *Dictyostelium discoideum*. Annu Rev Cell Dev Biol. 2004;20:223-53. doi: 10.1146/annurev.cellbio.20.011303.132633.
174. Ma L, Janetopoulos C, Yang L, Devreotes PN and Iglesias PA. 2004. Two complementary, local excitation, global inhibition mechanisms acting in parallel can explain the chemoattractant-induced regulation of PI(3,4,5)P3 response in *Dictyostelium* cells. Biophys J. 2004;87(6):3764-74. doi: 10.1529/biophysj.104.045484.
175. Janetopoulos C, Long Y and Devreotes PN. 2005. Mechanisms of Eukaryotic Chemotaxis. In: Cell Migration in Development and Disease (Wedlich D, ed.). Wiley-VCH Publications, Chapter 3, pp. 33-45.

176. Janetopoulos C, Borleis J, Vazquez F, Iijima M and Devreotes PN. 2005. Temporal and spatial regulation of phosphoinositide signaling mediates cytokinesis. *Dev Cell*. 2005;8:467-477.
177. Fache S, Dalous J, Engelund M, Hansen C, Chamaraux F, Fourcade B, Satre M, Devreotes P and Bruckert F. 2005. Calcium mobilization stimulates *Dictyostelium discoideum* shear-flow-induced cell motility. *J Cell Sci*. 2005;118: 3445-57.
178. Matsuoka S, Iijima M, Watanabe TM, Kuwayama H, Yanagida T, Devreotes PN and Ueda M. 2006. Single-molecule analysis of chemoattractant-stimulated membrane recruitment of a PH-domain-containing protein. *J Cell Sci*. 2006;119:1071-9.
179. Vazquez F, Matsuoka S, Sellers WR, Yanagida T, Ueda M and Devreotes PN. 2006. Tumor suppressor PTEN acts through dynamic interaction with the plasma membrane. *Proc Natl Acad Sci U S A*. 2006;103:3633-8.
180. Loovers HM, Postma M, Keizer-Gunnink I, Huang YE, Devreotes PN and Van Haastert PJM. 2006. Distinct roles of PI(3,4,5)P3 during chemoattractant signaling in *Dictyostelium*: A quantitative *in vivo* analysis by inhibition of PI3-kinase. *Mol Biol Cell*. 2006;17:1503-13.
181. Franca-Koh J, Kamimura Y and Devreotes PN. 2006. Navigating signaling networks: chemotaxis in *Dictyostelium discoideum*. *Curr Opin Genet Dev*. 2006 Aug;16(4):333-8. doi: 10.1016/j.gde.2006.06.001
182. Vazquez F and Devreotes PN. 2006. Regulation of PTEN function as PIP3 gatekeeper through membrane interaction. *Cell Cycle*. 2006 Jul;5(14):1523-7. doi: 10.4161/cc.5.14.3005.
183. Zhao M, Song B, Pu J, Wada T, Reid B, Tai G, Wang F, Guo A, Walczysko P, Sasaki T, Suzuki A, Forrester JV, Bourne HR, Devreotes PN, McCaig CD and Penninger JM. 2006. Electrical signals control wound healing through phosphatidylinositol-3-OH kinase-gamma and PTEN. *Nature*. 2006;442:457-60.
184. Janetopoulos C and Devreotes PN. 2006. Phosphoinositide signaling plays a key role in cytokinesis. Minireview. *J Cell Biol*. 2006;174:485-90.
185. Willard S and Devreotes PN. 2006. Signaling pathways mediating chemotaxis in the social amoebae, *Dictyostelium discoideum*. *Eur J Cell Biol*. 2006 Sep;85(9-10):897-904. doi: 10.1016/j.ejcb.2006.06.003.
186. Somesh BP, Neffgen C, Iijima M, Devreotes PN and Rivero-Crespo FR. 2006. *Dictyostelium* RacH regulates endocytic vesicular trafficking and is required for localization of vacuolin. *Traffic*. 2006 Sep;7(9):1194-212. doi: 10.1111/j.1600-0854.2006.00455.x.
187. Somesh BP, Vlahou G, Iijima M, Insall RH, Devreotes P and Rivero-Crespo FR. 2006. RacG regulates morphology, phagocytosis and chemotaxis. *Eukaryot Cell*. 2006 Oct;5(10):1648-63. doi: 10.1128/EC.00221-06.
188. Franca-Koh J, Kamimura Y and Devreotes PN. 2007. Leading-edge research: PtdIns(3,4,5)P3 and directed migration. *Nat Cell Biol*. 2007;9:15-17.

189. Chen L, Iijima M, Tang M, Landree MA, Huang YE, Xiong Y, Iglesias PA and Devreotes PN. 2007. PLA₂ and PI3K/PTEN pathways act in parallel to mediate chemotaxis. *Dev Cell*. 12(4):603-614.
190. Sasaki AT, Janetopoulos C, Lee S, Charest PG, Takeda K, Sundheimer LW, Meili R, Devreotes PN and Firtel RA. 2007. G protein-independent Ras/PI3K/F-actin circuit regulates basic cell motility. *J Cell Biol*. 2007;178(2):185-191.
191. Iglesias PA and Devreotes PN. 2008. Navigating through models of chemotaxis. *Curr Opin Cell Biol*. 2008 Feb; 20(1):35-40. doi: 10.1016/j.ceb.2007.11.011. PMID:18207721.
192. Kamimura Y, Xiong Y, Iglesias PA, Hoeller O, Bolourani P and Devreotes PN. 2008. PIP3-independent activation of TorC2 and PKB at the cell's leading edge mediates chemotaxis. *Curr Biol*. 2008 Jul 22;18(14):1034-43. doi: 10.1016/j.cub.2008.06.068. PMID: 18635356. PMC4018231.
193. Tang L, Franca-Koh J, Xiong Y, Chen M-Y, Long Y, Bickford RM, Knecht DA, Iglesias PA and Devreotes PN. 2008. Tsunami, the *Dictyostelium* homolog of the fused kinase is required for polarization and chemotaxis. *Genes Dev*. 2008 Aug 15;22(16):2278-2290. doi: 10.1101/gad.1694508. PMCID: PMC2518819.
194. Rahdar M, Inoue T, Meyer T, Zhang J, Vazquez F and Devreotes PN. 2009. A phosphorylation-dependent intramolecular interaction regulates the membrane association and activity of the tumor suppressor PTEN. *Proc Natl Acad Sci U S A*. 2009 Jan 13;106(2):480-5. doi: 10.1073/pnas.0811212106. PMCID: PMC2626728.
195. Kamimura Y, Tang M and Devreotes PN. 2009. Assays for Chemotaxis and Chemoattractant-Stimulated TorC2 Activation and PKB Substrate Phosphorylation in *Dictyostelium*. In: *Chemotaxis, Methods in Molecular Biology*, vol. 571, Jin T and Hereld D (eds.). Humana Press.
196. Franca-Koh J, Willard SS and Devreotes PN. 2009. G-Protein Signaling in Chemotaxis. In: Bradshaw RA and Dennis EA (eds.), *Handbook of Cell Signaling* 2nd edition. Oxford: Academic Press:1705-1712.
197. Kamimura Y and Devreotes PN. 2010. Phosphoinositide-dependent protein kinase (PDK) activity regulates phosphatidylinositol 3,4,5-trisphosphate-dependent and -independent protein kinase B activation and chemotaxis. *J Biol Chem*. 2010 March 12;285(11):7938-7946. doi: 10.1074/jbc.M109.089235. PMCID: PMC2832944.
198. Swaney KF, Huang CH and Devreotes PN. 2010. Eukaryotic chemotaxis: A network of signaling pathways controls motility, directional sensing, and polarity. *Annu Rev Biophys*. 2010;278:20445-20448. doi: 10.1146/annurev.biophys.093008.131228. PMID: 20192768. PMC4364543.
199. Xiong Y, Kabacoff C, Franca-Koh J, Devreotes PN, Robinson DN and Iglesias PA. 2010. Automated characterization of cell shape changes during amoeboid motility by skeletonization. *BMC Syst Biol*. 2010 Mar 24;4:33. doi: 10.1186/1752-0509-4-33. PMCID: PMC2864235.

200. Cai H, Das S, Kamimura Y, Long Y, Parent CA and Devreotes PN. 2010. Ras-mediated activation of the TorC2-PKB pathway is critical for chemotaxis. *J Cell Biol.* 2010 Jul 26;190(2):233-245. doi: 10.1083/jcb.201001129. PMC2930282.
201. Xiong Y, Huang CH, Iglesias PA and Devreotes PN. 2010. Cells navigate with a local-excitation, global-inhibition-biased excitable network. *Proc Natl Acad Sci U S A.* 2010 Oct 5;107(40):17079-86. doi:10.1073/pnas.1011271107. PMC2951443.
202. Kamimura Y, Cai H, Tang M and Devreotes PN. 2010. TorC2 and chemotaxis in *Dictyostelium discoideum*. In: *The Enzymes* (Hall MN and Tamanoi F, eds.). Academic Press, Vol 28, pp. 125-142.
203. QnAs with Peter N. Devreotes. 2010 Interview by Prashant Nair. *Proc Natl Acad Sci U S A.* 2010; 107:19613. PMC2993395.
204. Tang M, Iijima M, Kamimura Y, Chen L, Long Y and Devreotes PN. 2011. Disruption of PKB signaling restores polarity to cells lacking tumor suppressor PTEN. *Mol Biol Cell.* 2011;22:437-447. PMC3038642
205. de Keijzer S, Galloway J, Devreotes PN and Iglesias PA. 2011. Disrupting microtubule network immobilizes amoeboid chemotactic receptor in the plasma membrane. *Biochim Biophys Acta* 2011 Jun;1808(6):1701-1708. doi: 10.1016/j.bbamem.2011.02.009. PMC3079046.
206. Artemenko Y, Swaney K and Devreotes PN. 2011. Assessment of development and chemotaxis in *Dictyostelium discoideum* mutants. *Methods Mol Biol.* 2011;769:287-309. doi: 10.1007/978-1-61779-207-6_20. PMC4374595.
207. Gao RC, Zhang XD, Sun YH, Kamimura Y, Mogilner A, Devreotes PN and Zhao M. 2011. Different roles of Membrane potentials in electrotaxis and chemotaxis of *Dictyostelium* Cells. *Eukaryot Cell.* 2011 Sep;10(9):1251-1256. doi: 10.1128/EC.05066-11. PMC3187056.
208. Tang M, Iijima M and Devreotes PN. 2011. Generation of cells that ignore the effects of PIP3 on cytoskeleton. *Cell Cycle.* 2011 Sep 1;10(17):2817-8. doi: 10.4161/cc.10.17.16744. PMC3218594.
209. Cai H and Devreotes PN. 2011. Moving in the right direction: How eukaryotic cells migrate along chemical gradients. *Semin Cell Dev Biol.* 2011 Oct;22(8):834-841. doi: 10.1016/j.semcdb.2011.07.020. PMC4083813.
210. Cai H, Huang CH, Devreotes PN and Iijima M. 2012. Analysis of chemotaxis in *Dictyostelium*. *Methods Mol Biol.* 2012;757:451-468. PMC3381519.
211. Iglesias PA and Devreotes PN. 2012. Biased excitable networks: how cells direct motion in response to gradients. *Curr Opin Cell Biol.* 2012 Apr;24(2):245-53. doi: 10.1016/j.ceb.2011.11.009. PMC3415256.
212. Galloway JF, Winter A, Lee KH, Park J, Dvoracek C, Devreotes PN and Searson PC. 2012. Quantitative characterization of the lipid encapsulation of quantum dots for biomedical applications. *Nanomedicine.* 2012 Oct;8(7):1190-1199. doi: 10.1016/j.nano.2011.12.002. PMC3320680.

213. Artemenko Y, Batsios P, Borleis J, Gagnon Z, Lee J, Rohlf M, Sanséau D, Willard SS, Schleicher M and Devreotes PN. 2012. Tumor suppressor Hippo/MST1 kinase mediates chemotaxis by regulating spreading and adhesion. *Proc Natl Acad Sci U S A.* 2012;109(34):13632-13637. PMC3427065.
214. Zhao S, Gao R, Devreotes PN, Mogilner A and Zhao M. 2013. 3D Arrays for high throughput assay of cell migration and electrotaxis. *Cell Biol Int. Sep;*37(9):995-1002. doi: 10.1002/cbin.10116. PMC3729600.
215. Bolduc DM, Rahdar M, Tu-Sekine B, Sivakumaren SC, Raben DM, Amzel LM, Devreotes PN, Gabelli SB and Cole PA. 2013. Phosphorylation-mediated PTEN Conformational Closure and Deactivation Revealed with Protein Semisynthesis. *Elife.* 2013 Jul 9;2:e00691. doi: 10.7554/eLife.00691. PMC3707082.
216. Artemenko Y and Devreotes PN. 2013. Hippo on the move: tumor suppressor regulates adhesion and migration. *Cell Cycle.* 2013 Feb 15;12(4):535-6. doi: 10.4161/cc.23668. PMC3594247.
217. Shi C, Huang C, Devreotes PN and Iglesias P. 2013. Interaction of motility, directional sensing, and polarity modules recreates the behaviors of chemotaxing cells. *PLoS Comput Biol.* 2013 Jul; 9(7): e1003122. doi: 10.1371/journal.pcbi.1003122. PMC3701696.
218. Roppenser B, Kwon H, York JD, Snyder SH, Devreotes PN, Grinstein S and Brummel JH. 2013. Multiple host kinases contribute to Akt activation during *Salmonella* infection. *PLoS One.* 2013 Aug 22;8(8):e71015. doi: 10.1371/journal.pone.0071015. eCollection 2013. PMC3750030.
219. Huang C, Tang M, Shi C, Iglesias P and Devreotes PN. 2013. An excitable signal integrator couples to an idling cytoskeletal oscillator to drive cell migration. *Nat Cell Biol.* 2013 Nov;15(11):1307-16. doi: 10.1038/ncb2859. PMC3838899.
220. Nguyen H-N, Afkari Y, Senoo H, Sesaki H, Devreotes PN and Iijima M. 2014. Mechanisms of human PTEN localization revealed by heterologous expression in *Dictyostelium*. *Oncogene.* 2014 Dec 11;33(50):5688-96. Doi: 10.1038/onc.2013.507. PMC4041858.
221. Cai H, Katoh-Kurasawa M, Muramoto T, Santhanam B, Long Y, Li L, Ueda M, Iglesias PA, Shaulsky G and Devreotes PN. 2014. Nucleocytoplasmic shuttling of a GATA transcription factor functions as a development timer. *Science.* 2014 Mar 21;343(6177):1249531. doi: 10.1126/science.1249531. PMC4061987.
222. Artemenko Y, Lampert TJ and Devreotes PN. 2014. Moving towards a paradigm: common mechanisms of chemotactic signaling in *Dictyostelium* and mammalian leukocytes. *Cell Mol Life Sci.* 2014 Oct;71(19):3711-47. doi: 10.1007/s00018-014-1638-8. PMC4162842.
223. Nguyen HN, Yang JM, Afkari Y, Park BH, Sesaki H, Devreotes PN and Iijima M. 2014. Engineering ePTEN, an enhanced PTEN with increased tumor suppressor activities. *Proc Natl Acad Sci U S A.* 2014 Jul 1;111(26):E2684-93. doi: 10.1073/pnas.1409433111. PMC4084459.

224. Pulido R, Baker SJ, Barata JT, Carracedo A, Cid VJ, Chin-Sang ID, Davé V, den Hertog J, Devreotes P, Eickholt BJ, Eng C, Furnari FB, Georgescu MM, Gericke A, Hopkins B, Jiang X, Lee SR, Lösche M, Malaney P, Matias-Guiu X, Molina M, Pandolfi PP, Parsons R, Pinton P, Rivas C, Rocha RM, Rodríguez MS, Ross AH, Serrano M, Stambolic V, Stiles B, Suzuki A, Tan SS, Tonks NK, Trotman LC, Wolff N, Woscholski R, Wu H and Leslie NR. 2014. A unified nomenclature and amino acid numbering for human PTEN. *Sci Signal*. 2014 Jul 1;7(332):pe15. doi: 10.1126/scisignal.2005560. PMC4367864.
225. Devreotes PN and Horwitz AR. 2014. Signaling networks that regulate cell migration. In: Cantley LC, Hunter T, Sever R, Thorner J. (Eds.). *Signal Transduction. Principles, Pathways and Processes*. Cold Spring Harbor Laboratory Press. Cold Spring Harbor, New York: pp. 183-198, 2014.
226. Nguyen H-N, Yang JM, Rahdar M, Keniry M, Swaney KF, Parsons R, Park BH, Sesaki H, Devreotes PN and Iijima M. 2015. A new class of cancer-associated PTEN mutations defined by membrane translocation defects. *Oncogene*. 2015 Jul;34(28):3737-43. doi: 10.1038/onc.2014.293. PMC4377315.
227. Wang M, Artemenko Y, Cai W, Iglesias PA and Devreotes PN. 2014. The Directional Response of Chemotactic Cells Depends on a Balance between Cytoskeletal Architecture and the External Gradient. *Cell Rep*. 2014 Nov. 6;9(3):1110-21. doi: 10.1016/j.celrep.2014.09.047. PMC4250826.
228. Tang M, Wang M, Shi C, Iglesias PA, Devreotes PN and Huang CH. 2014. Evolutionarily conserved coupling of adaptive and excitable networks mediates eukaryotic chemotaxis. *Nat Commun*. 2014 Oct 27;5:5175. PMC4211273
229. Yang JM, Nguyen HN, Sesaki H, Devreotes PN and Iijima M. 2015. Engineering PTEN function: Membrane association and activity. *Methods*. 2015 May; 77-78:119-24. doi: 10.1016/j.jymeth.2014.10.018. PMC4388803.
230. Swaney KF, Borleis J, Iglesias PA and Devreotes PN. 2015. Novel protein Callipygian defines the back of migrating cells. *Proc Natl Acad Sci U S A*. 2015 Jul 21;112(29):E3845-54. PMC4517219.
231. Gao R, Zhao Si, Jiang X, Sun Y, Zhao Sa, Gao J, Borleis J, Willard S, Tang M, Cai H, Kamimura Y, Huang Y, Jiang J, Huang Z, Mogilner A, Pan T, Devreotes PN and Zhao M. 2015. A large-scale screen reveals genes that mediate electrotaxis in *Dictyostelium Discoideum*. *Sci Signal*. 2015 May 26;8(378):ra50. doi: 10.1126/scisignal.aab0562. PMC4470479.
232. Santhanam B, Cai H, Devreotes PN, Shaulsky G and Katoh-Kurasawa M. 2015. The GATA transcription factor GtaC regulates early developmental gene expression dynamics in *Dictyostelium*. *Nature Communications*. *Nat Commun*. 2015 Jul 6;6:7551. doi: 10.1038/ncomms8551. PMC4506546.
233. Nguyen H-N, Yang J-M, Miyamoto T, Itoh K, Rho E, Zhang Q, Inoue T, Devreotes PN, Sesaki H and Iijima M. 2015. Opening the conformation is a master switch for the dual localization and phosphatase activity of PTEN. *Sci Rep*. 2015 Jul 28;5:12600. doi: 10.1038/srep12600. PMC4517176.

234. Huang C-H and Devreotes PN. 2015. Reaction diffusion waves of phosphoinositides in the membrane. ASBMB TODAY Sep 2015, Lipid News.
235. Hoeller O, Toettcher JE, Cai H, Sun Y, Huang CH, Freyre M, Zhao M, Devreotes PN and Weiner OD. 2016. G β regulates coupling between Actin Oscillators for Cell Polarity and Directional Migration. PLoS Biol. 2016 Feb. 18;14(2):e1002381. doi: 10.1371/journal.pbio.1002381. PMC4758609.
236. Artemenko Y, Axiotakis Jr. L, Borleis J, Iglesias PA and Devreotes PN. 2016. Chemical and mechanical stimuli act on common signal transduction and cytoskeletal networks. Proc Natl Acad Sci U S A. 2016 Nov 22; 113(47): E7500-E7509. doi: 10.1073/pnas.1608767113. PMC15127353. Erratum in: Proc Natl Acad Sci U S A. 2018 Jul 10;115(28): E6669. doi:10.1073/pnas.1809926115. PMC6048546.
237. Miao Y, Bhattacharya S, Edwards M, Cai H, Inoue T, Iglesias PA and Devreotes PN. 2017. Altering the threshold of an excitable signal transduction network changes cell migratory modes. Nat Cell Biol. 2017 Apr;19(4):329-340. doi: 10.1038/ncb3495. PMC5394931.
238. Chen Z, Jiang H, Xu W, Li X, Dempsey DR, Zhang X, Devreotes P, Wolberger C, Amzel M, Gabelli SB and Cole PA. 2017. A Tunable Brake for HECT Ubiquitin Ligases. Mol Cell. 2017 May 4;66(3): 345-357.e6. doi: 10.1016/j.molcel.2017.03.020. PMC5489419.
239. Lampert TJ, Kamprad N, Edwards M, Borleis J, Watson AJ, Tarantola M and Devreotes PN . 2017. Shear force-based genetic screen reveals negative regulators of cell adhesion and protrusive activity. Proc Natl Acad Sci U S A. 2017 Sep 12; 114(37): E7727-E7736. doi: 10.1073/pnas.1616600114. PMC5603988. Erratum in: Proc Natl Acad Sci U S A. 2018 Jul 10; 115(28): E6670. doi: 10.1073/pnas.1809927115. PMC6048541.
240. Artemenko Y and Devreotes P N. 2017. Assessment of *Dictyostelium discoideum* Response to Acute Mechanical Stimulation. J Vis Exp. 2017 Nov 9;(129):56411. doi:10.3791/56411. PMC5749977.
241. Devreotes PN, Bhattacharya S, Edwards M, Iglesias PA, Lampert T, Miao Y. 2017. Excitable signal transduction networks in directed cell migration. Annu Rev Cell Dev Biol. 2017 Oct 6;33:103-25. doi: 10.1146/annurev-cellbio-100616-060739. PMC5792054.
242. Schiapparelli P, Guerrero-Cazares H, Magaña-Maldonado R, Hamilla SM, Ganaha S, Goulin Lippi Fernandes E, Huang CH, Aranda-Espinoza H, Devreotes P and Quinones-Hinojosa A. 2017. NKCC1 regulates migration ability of glioblastoma cells by modulation of actin dynamics and interacting with Cofilin. EBioMedicine. 2017 Jul;21:94-103. doi: 10.1016/j.ebiom.2017.06.020. PMC5514434.
243. Edwards M, Cai H, Abubaker-Sharif B, Long Y, Lampert T and Devreotes PN. 2018. Insight from the maximal activation of the signal transduction excitable network in *Dictyostelium discoideum*. Proc Natl Acad Sci U S A. 2018 Apr 17;115(16): E3722-E3730. doi: 10.1073/pnas.1710480115. PMC5910810.

244. Correction for Edwards et al., Insight from the maximal activation of the signal transduction excitable network in *Dictyostelium discoideum*. *Proc Natl Acad Sci U S A*. 2018 Jul 10;115(28):E6671. doi: 10.1073/pnas.1809928115. PMC6048533.
245. Li X, Edwards M, Swaney KF, Singh N, Bhattacharya S, Borleis J, Long Y, Iglesias PA, Chen J and Devreotes PN. 2018. Mutually inhibitory Ras-PI (3, 4) P2 feedback loops mediate cell migration. *Proc Natl Acad Sci U S A*. 2018 Sep 25;115(39): E9125-E9134. doi: 10.1073/pnas.1809039115. PMC6166812.
Erratum in: *Proc Natl Acad Sci U S A*. 2018 Oct 23;115(43): E10286. doi: 10.1073/pnas.1816155115. PMC6205420.
246. Neumann NM, Perrone MC, Veldhuis JH, Huebner RJ, Zhan H, Devreotes PN, Brodland GW and Ewald AJ. 2018. Coordination of receptor tyrosine kinase signaling and interfacial tension dynamics drives radial intercalation and tube elongation. *Dev Cell*. 2018 Apr 9;45(1):67-82.e6. doi: 10.1016/j.devcel.2018.03.11. PMC5983037.
247. Miyanaga Y, Kamimura Y, Kuwayama H, Devreotes PN and Ueda M. (2018). Chemoattractant receptors activate, recruit and capture G proteins for wide range chemotaxis. *Biochem Biophys Res Commun*. 2018 Dec 9;507(1-4):304-310. doi: 10.1016/j.bbrc.2018.11.029.
248. Miao Y, Bhattacharya S, Banerjee T, Abubaker-Sharif B, Long Y, Inoue T, Iglesias PA and Devreotes PN. 2019. Wave patterns organize cellular protrusions and control cortical dynamics. *Mol Syst Biol*. 2019 Mar 11;15(3):e8585. doi: 10.15252/msb.20188585. PMC6413885.
249. Li X, Miao Y, Pal DS and Devreotes PN (2019). Excitable networks controlling cell migration during development and disease. *Semin Cell Dev Biol*. 2020 Apr; 100:133-142. doi: 10.1016/j.semcdb.2019.11.001. PMC7071959.
250. Pal DS*, Li X*, Banerjee T, Miao Y and Devreotes PN (2019). The Excitable Signal Transduction Networks: Movers and Shapers of Eukaryotic Cell Migration. *Int J Dev Biol*. 2019;63 (8-9-10): 407-416. doi: 10.1387/ijdb.190265pd. PMC6956983. *Equal contribution.
251. Cao Y, Ghabache E, Miao Y, Niman C, Hakozi H, Reck-Peterson SL, Devreotes PN and Rappel W-J. 2019. A minimal computational model for three-dimensional cell migration. *J R Soc Interface*. 2019 Dec;16(161): 20190619. doi: 10.1098/rsif.2019.0619. PMC6936042.
252. Devreotes P. (2019). Moving toward molecular mechanisms for chemotaxis in eukaryotic cells. 2019. *Mol Biol Cell*. 2019 Nov 1;30(23):2873-77. doi: 10.1091/mbc.E19-07-0393. PMC6822590.
253. Jiao Z, Cai H, Long Y, Sirka OK, Padmanaban V, Ewald AJ and Devreotes PN. 2020. Statin-induced GGPP depletion blocks macropinocytosis and starves cells with oncogenic defects. *Proc Natl Acad Sci U S A*. 2020 Feb 25; 117(8): 4158-4168. doi: 10.1073/pnas.1917938117. PMC7049144.
254. Zhan H, Bhattacharya S, Cai H, Iglesias PA, Huang C-H and Devreotes PN. 2020. An Excitable Ras/PI3K/ERK Signaling Network Controls Migration and Oncogenic Transformation in Epithelial Cells. *Dev Cell*. 2020 Sep 14;54(5):608-623.e5. doi: 10.1016/j.devcel.2020.08.001. PMC7505206 (available on 2021-09-14).

255. Bhattacharya S, Banerjee T, Miao Y, Zhan H, Devreotes PN and Iglesias PA. 2020. Traveling and standing waves mediate pattern formation in cellular protrusions. *Science Advances*. 2020 Aug 7; 6(32):eaay 7682. doi: 10.1126/sciadv.aay7682. PMC7413732.
256. Li X, Pal DS, Biswas D, Iglesias PA and Devreotes PN. Reverse Fountain Flow of PI(3,4)P2 Polarizes Cells. *EMBO J*. (Accepted)
257. Song B, Gu Y, Jiang W, Li Y, Ayre WN, Liu Z, Yin T, Janetopoulos C, Iijima M, Devreotes P and Zhao M. 2020. Electric Signals Counterbalanced Posterior vs Anterior PTEN Signaling in Directed Migration of Dictyostelium. *Research Square* 2020. (Preprint)