**CURRICULUM VITAE**

Robert E. Gundersen

Department of Molecular & Biomedical Sciences

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**Education:**

1979 B.S. Biology, University of Lowell, Lowell, MA

1983 Ph.D. Biological Sciences, University of Texas, Austin, TX

2010-2011 Maine Development Foundation-Leadership Maine  Class

2014 Cornell University, Faculty Leadership and Professional Development Program

**Professional Experience:**

2006-present Chair & Associate Professor; Department of Molecular & Biomedical Sciences, The University of Maine, Orono

1998-present Associate Professor; Department of Molecular & Biomedical Sciences,

The University of Maine, Orono

1992-1998 Assistant Professor; Department of Biochemistry, Microbiology

and Molecular Biology, The University of Maine, Orono, ME

1987-1991 Postdoctoral Fellow; Department of Biological Chemistry, The Johns

Hopkins University School of Medicine, Baltimore, MD

Sponsor: Dr. Peter N. Devreotes

1984-1987 Postdoctoral Fellow; Department of Biochemistry

The University of Wisconsin, Madison, WI

Sponsor: Dr. David L. Nelson

1979-1983 Ph.D. Candidate; Department of Biological Sciences

The University of Texas, Austin, TX

Advisor: Dr. Guy A. Thompson, Jr.

1978-1979 Senior Research Project; Department of Biological Sciences

The University of Lowell, Lowell, MA

Advisor: Dr. E. R. Rivera

1977 NSF-Undergraduate Research Fellow; Department of Biological Sciences

The University of Lowell, Lowell, MA

Advisor: Dr. Nicholas J. Rencrica

**Societies:**

The American Society for Cell Biology

American Association for the Advancement of Science

**Teaching Experience at the University of Maine:**

Biochemistry & laboratory (BMB 322/323)

Advanced Biochemistry (BMB 460)

Analytical and Preparative Biochemistry Laboratory Methods (BMB 464)

Cellular Signal Transduction Mechanisms (BMB 530, graduate)

Organic Chemistry & laboratory (BMB 221/222)

Seminar in Biochemistry BMB 582 (undergraduate and graduate).

Radiation Biology

**Research Grants while at the University of Maine:**

1. University of Maine Summer Faculty Research Award; A Determination of the Number of Phosphorylation Sites on G2 of *Dictyostelium*. 6/92 - 8/92; $5000 (summer salary)

2. University of Maine Faculty Research Fund: Equipment and Book Award

Milli-Q Plus Water Purification System; $5030

3. University of Maine Regular Faculty Research Fund Award; Identification of the Phosphorylation Site(s) on G2 of *Dictyostelium*. 1/93 - 12/93; $5700.

4. Nation Science Foundation to B. Speer, D. Croall, R. Gundersen, A. DeSiervo, S. Brawley Acquisition of an HPLC System; 1994; $24,080

5. Nation Science Foundation; The Role of G Protein Phosphorylation.

7-1-93 through 1-31-97; $300,000

6. American Heart Association-Maine Affiliate

A functional analysis of the G protein -subunit. 7-1-96 through 6-30-98; $48,940

7. National Institute of Health; *Dictyostelium* G2 activation of guanylyl cyclase.

5-1-97 through 4-30-00: $105,901

8. Nation Science Foundation: Undergraduate Research Supplement (for 2 students)

Summer of 1994 for 1 student and academic year 1994-1995 for the other.

Project Amount: $6700 (two $3000 student stipends and $700 for supplies)

9. Nation Science Foundation: Undergraduate Research Supplement

Summer of 1995 for one student; Project Amount: $3600

10. Nation Science Foundation: Undergraduate Research Supplement

Summer of 1996 for one student; Project Amount: $4000

11. Nation Science Foundation: Identification of functional amino acids in the G protein -subunit. 5-15-00 through 4-30-01; $50,000

12. National Institute of Health; *Dictyostelium* G2 localization and palmitoylation.

9-4-00 through 9-03-03 $136,190

13. Maine Cancer Foundation: Protein palmitoylation: Examination and characterization of the protein palmitoyl-CoA transferase family of *Dictyostelium*.

7-1-03 through 6-30-04 $17,600

**Complete Publications List:**

Papers while at UMaine

1. Gundersen, R.E., You, J., McCarty, C., Farnham, K., Rauch, S. Willis, N. and Prince, A. 2005 Loss-of-function mutations identified in the Helical domain of the G Protein -subunit, G2, of *Dictyostelium discoideum*. BBA. 1722; 262-270.

2. Root, P.A., Prince, A., and Gundersen, R.E. 1999 Aggregation of *Dictyostelium discoideum* is dependent on myristoylation and membrane localization of the G protein -subunit, G2. J. Cell. Biochem. 74; 301-311.

3. Gundersen, R.E. 1997 Phosphorylation of the G protein -subunit, G2, of *Dictyostelium discoideum* requires a functional and activated G2. J. Cell. Biochem. 66:268-276.

4. Chen, M.Y., P.N. Devreotes, and R.E. Gundersen 1994 Serine-113 is the Site of Receptor-Mediated Phosphorylation of the *Dictyostelium* G Protein -subunit, G2. J. Biol. Chem. 269, 20925-20930.

Papers resulting from collaboration while at UMaine.

1. Srinivasan, J., Gundersen, R.E., and Hadwiger, J.A. 1999 Activated G-subunits can inhibit multiple signal transduction pathways during *Dictyostelium* development. Dev. Biol. 215; 443-452.

2. Brazill, D.T., Gundersen, R.E., and Gomer, R.H. 1997 A cell-density sensing factor regulates the lifetime of a chemoattractant-induced G-GTP conformation. FEBS Lett. 404; 100-104.

3. Son, M., R.E. Gundersen, and D.L. Nelson 1993 A Second Member of the Novel Ca2+-dependent Protein Kinase Family from *Paramecium tetraurelia*: Purification and Characterization. J. Biol. Chem. 268, 5940-5948.

As a postdoctorate

1. Wu, L-J., C. Gaskins, R.E. Gundersen, J.A. Hadwiger, R.L. Johnson, G.S. Pitt, R.A. Firtel, and P.N. Devreotes 1993 Signal Transduction by G Proteins in *Dictyosleium discoideum*. In: Handbook of Experimental Pharmacology: GTPase in Biology II. (eds. B. Dickey and L. Birnbaumer) Berln, NY: Springer-Verlag Publication 335-349.

2. Johnson, R. L., R. E. Gundersen, D. Herald, G. S. Pitt, S. Tugendreich, C.L. Saxe, A. R. Kimmel, and P. N. Devreotes 1992 G protein-linked Signaling Pathways Mediate Develoment in *Dictyostelium*. In: The Cell Surface. Cold Spring Harbor Symposium of Quantitative Biology. Vol. LVII, pp. 169-176.

3. Gundersen, R.E. and P.N. Devreotes 1990 In vivo Receptor Mediated Phosphorylation of a G Protein in *Dictyostelium.* Science 248, 591-593.

4. Pitt, G.S., R.E. Gundersen, and P.N. Devreotes 1990 Mechanisms of Excitation and Adaptation in *Dictyostelium*. Seminars in Cell Biology 1, 99-104.

5. Pitt, G. S., R. E. Gundersen, P. J. Lilly, M. B. Pupillo, R. A. Vaughan, and P. N. Devreotes 1990 G Protein-linked Signal Transduction in Aggregating Dictyostelium. In: G Proteins and Signal Transduction. (eds. Nathanson, N.M. and Harden, T.K.) The Rockefellar U. Press, pp. 126-131.

6. Kumagai, A., M. Pupillo, R.E. Gundersen, M-. Lye, P.N. Devreotes, and R. Firtel 1989 Regulation and Function of G Protein Subunits in Dictyostelium. Cell 57, 265-275.

7. Gundersen, R. E., R. Johnson, P. Lilly, G. Pitt, M. Pupillo, T. Sun, R. Vaughan, and P. N. Devreotes 1989 Reversible Phosphorylation of G Protein-coupled Receptors Controls cAMP Oscillations in *Dictyostelium*. In: Theoretical Models for Cell to Cell Signaling (ed. Goldbeter, A.) Academic Press London, pp. 477-486.

8. Johnson, R., R. E. Gundersen, P. Lilly, G. Pitt, M. Pupillo, T. J. Sun, R. Vaughan, and P. N. Devreotes 1989 G-Protein Linked Signal Transduction Systems Control Development in *Dictyostelium*. In: The Molecular Basis of Positional Signaling (eds. Kay, R. & Smith, J. C.) 75-80.

9. Gundersen R.E., and D.L. Nelson 1987 A Novel Calcium-dependent Protein Kinase in *Paramecium*. J. Biol. Chem. 262, 4602-4609.

As a graduate student:

1. Gundersen, R. E., and G. A. Thompson, Jr. 1985 Further Studies of Dopamine Metabolism and Function in *Tetrahymena*. J. Protozoology 32, 25-31.

2. Lynch, D. V., R. E. Gundersen, and G. A. Thompson, Jr. 1983 Separation of Galactolipid Molecular Species by High Performance Liquid Chromatography. Plant Physiol. 72, 903-905.

3. Gundersen, R. E., and G. A. Thompson, Jr. 1983 Factors Influencing the Pattern of Dopamine Secretion in *Tetrahymena pyriformis*. Biochim. Biophys. Acta 755, 186-194.

4. Goldman, M., R. E. Gundersen, C. K. Erickson, and G. A. Thompson, Jr. 1981 High Performance Liquid Chromatographic Analysis of Catecholamines in Growing and Non-growing Tetrahymena pyriformis. Biochim. Biophys. Acta 676, 221-225.

As an undergraduate:

1. Gundersen, R. E., and E. R. Rivera 1982 An Ultrastructural Study of the Development of the Dermal Iridophores and Structural Pigmentation in *Poecilia reticulata* (Peters). J. Morphology 172, 349-359.

**Graduate Students Mentored at UMaine**

M.S.

Claire Moriarty (MPS, 1995) Brent Wells (2003)

Jianxin You (1996) Christopher Bahl (2006)

Patsy Root (1996) Bethany Bodwell (2007)

Si Wan Kim (1998) Nitin Nair (MPS, 2007)

Dayou Lui (1999) Yusuke Kageyama (2010)

Kate Farnham (1999) Joel Amburg (2010)

Christopher McCarty (2000) Sarah Alamer (2013)

Steve Rauch (2002)

Ph.D.

Anthony Semirale (2002)

Sarah Alamer (current, GSBSE)