**BIOGRAPHICAL SKETCH**

Provide the following information for the key personnel in the order listed for Form Page 2.
Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

| NAME | POSITION TITLE |
|---|---|
| Michael F. Goy | Associate Professor |

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)*

| INSTITUTION AND LOCATION | DEGREE *(if applicable)* | YEAR(s) | FIELD OF STUDY |
|---|---|---|---|
| University of Oregon | B.S. | 1971 | chemistry |
| University of Wisconsin | Ph.D. | 1977 | neuroscience |

**NOTE: The Biographical Sketch may not exceed four pages. Items A and B (together) may not exceed two of the four-page limit. Follow the formats and instructions on the attached sample.**

**A. Positions and Honors.** List in chronological order previous positions, concluding with your present position. List any honors. Include present membership on any Federal Government public advisory committee.

**Postdoctoral training:**

1977-1979 Postdoctoral fellow, Department of Biochemistry, University of Wisconsin, Madison, WI
1979-1982 Postdoctoral fellow, Department of Neurobiology, Harvard Medical School, Boston, MA

**Academic appointments:**

1982-1985 Instructor, Department of Neurobiology, Harvard Medical School, Boston, MA
1985-1988 Lecturer, Department of Neurobiology, Harvard Medical School, Boston, MA
1988-1995. Assistant Professor of Physiology, University of North Carolina, Chapel Hill, NC
1991-pres. Director, Immunoassay Core, Center for Gastrointestinal Biology and Disease, University of North Carolina, Chapel Hill, NC
1995-pres. Associate Professor of Physiology, University of North Carolina, Chapel Hill, NC

**Honors, awards, and service:**

Phi Beta Kappa
Woodrow Wilson Fellow
National Science Foundation predoctoral fellowship
Muscular Dystrophy Association postdoctoral fellowship
Study section member, American Heart Association Mid-Atlantic Affiliate (2003 – present)
Ad hoc reviewer, NIH and NSF

**B. Peer-reviewed publications (selected from a list of 40).**


1. Kort EN, Goy MF, Larsen SH, and Adler J (1975) Methylation of a membrane protein involved in chemotaxis. *Proc Nat Acad Sci USA* **72**: 3939-3943.
2. Springer MS, Goy MF, and Adler J (1977) Sensory transduction in *Escherichia coli*: A requirement for methionine in sensory adaptation. *Proc Nat Acad Sci USA* **74:** 183-187.
3. Springer MS, Goy MF, and Adler J (1977) Sensory transduction in *Escherichia coli*: Two complementary pathways of information processing that involve methylated proteins. *Proc Nat Acad Sci USA* **74**: 3312-16.
4. Goy MF, Springer MS, and Adler J (1977) Sensory transduction in *Escherichia coli*: Role of a protein methylation reaction in sensory adaptation. *Proc Nat Acad Sci USA* **74**: 4964-4968.
5. Muskavitch MA, Kort EN, Springer MS, Goy MF, and Adler J (1978) Attraction by repellents: An error in sensory information processing by bacterial mutants. *Science* **201**: 63-65.
6. Goy MF, Springer MS, and Adler J (1978) Failure of sensory adaptation in bacterial mutants defective in a protein methylation reaction. *Cell* **15**: 1231-1240.
7. Springer MS, Goy MF, and Adler J (1979) Protein methylation in behavioral control mechanisms and in signal transduction. *Nature* **280**: 279-284.
8. Toews ML, Goy MF, Springer MS, and Adler J (1979) Attractants and repellents control demethylation of methylated chemotaxis proteins in *Escherichia coli*. *Proc Nat Acad Sci USA* **76**: 5544-5548.
9. Goy MF, Schwarz TL, and Kravitz EA (1984) Serotonin-induced protein phosphorylation in a lobster neuromuscular preparation. *J. Neurosci.* **4**: 611-626.

10. Goy MF, Mandelbrot DA, and York CM (1987) Identification and characterization of a polypeptide from a lobster neurosecretory gland that induces cyclic GMP accumulation in lobster neuromuscular preparations. *J. Neurochem.* **48**: 954-966.
11. Goy MF and Kravitz EA (1989) Cyclic AMP only partially mediates the actions of serotonin at lobster neuromuscular junctions. *J. Neurosci.* **9**: 369-379.
12. Pavloff MS and Goy MF (1990) Purification and chemical characterization of peptide G1, an invertebrate neuropeptide that stimulates cyclic GMP metabolism. *J. Neurochem.* **55**: 788-797.
13. Goy MF (1990) Activation of membrane guanylate cyclase by an invertebrate peptide hormone. *J. Biol. Chem.* **265:** 20220-20227.
14. McGehee DS, Goy MF, and Oxford GS (1992) Involvement of the nitric oxide-cyclic GMP pathway in desensitization of bradykinin responses of cultured rat sensory neurons. *Neuron* **9**: 315-324.
15. Corbin JC, Repaske DR, Conti M, and Goy MF (1993) A cyclic GMP-stimulated cyclic nucleotide phosphodiesterase gene is highly expresed in limbic system of the rat brain. *Neuroscience* **56:** 673-686.
16. Li Z and Goy MF (1993) Peptide-regulated guanylate cyclase pathways in rat colon: in situ localization of GCA, GCC, and guanylin mRNA. *Am. J. Physiol*. **265:** G394-G402.
17. Geary CA, Goy MF, and Boucher R (1993) Synthesis and vectorial export of cGMP from human airway epithelium: expression of soluble and CNP-specific guanylate cyclases. *Am. J. Physiol.* **265:** L598-L605.
18. Worden MK, Kravitz EA, and Goy MF (1995) Peptide F1, an N-terminally extended analogue of FMRFamide, enhances contractile activity in multiple target tissues in lobster. *J. Exp. Biol.* **198:** 97-108.
19. Li Z, Taylor-Blake B, Light AR, and Goy MF (1995) Guanylin, an endogenous ligand for C-type guanylate cyclase, is produced by goblet cells in the rat intestine. *Gastroenterology* **109:** 1863-1875.
21. Scholz NL, Goy MF, Truman JW, and Graubard K (1996) Nitric oxide and peptide neurohormones activate cGMP synthesis in the crab stomatogastric nervous system. *J. Neurosci.* **16:** 1614-1622.
21. Li Z, Knowles JW, Goyeau D, Prabhakar S, Short DB, Perkins AG, and Goy MF (1996) Low salt intake down-regulates the guanylin signaling pathway in rat distal colon. *Gastroenterology* **111:**1714-1721.
22. Li Z, Perkins A, Peters MF, Campa MJ, and Goy MF (1997) Purification, cDNA Sequence, and Tissue Distribution of Rat Uroguanylin. *Reg. Peptides* **68**: 45-56.
23. Perkins AG, Goy MF, and Li Z (1997) Uroguanylin is expressed by enterochromaffin cells in the rat gastrointestinal tract. *Gastroenterology*. **113**: 1007-1014.
24. Prabhakar S, Short DB, Scholz NL, and Goy MF (1997) Identification of nitric oxide-sensitive and -insensitive forms of cytoplasmic guanylate cyclase. *J. Neurochem.* **69**: 1650-1660.
25. Oliver PM, John SWM, Purdey KE, Kim R, Maeda N, Goy MF, and Smithies O (1998) Natriuretic peptide receptor 1 expression influences blood pressures of mice in a dose-dependent manner. *Proc Nat Acad Sci USA* **95:** 2547-2551.
26. Nakazato M, Yamaguchi H, Date Y, Miyazato M, Kangawa K, Goy MF, Chino N, and Matsukura S (1998) Tissue distribution, cellular source, and structural analysis of rat immunoreactive uroguanylin. *Endocrinology* **139**: 5247-5254.
27. Diversè-Pierluissi M, McIntire WE, Myung C-S, Lindorfer MA, Garrison JC, Goy MF, and Dunlap K (2000) Selective coupling of G protein bg complexes to inhibition of Ca2+ channels *J. Biol Chem.* **275**:28380-28385.
28. Qian X, Prabhakar S, Nandi A, Visweswariah SS, and Goy MF (2000) Expression of GC-C, a receptor-guanylate cyclase, and its endogenous ligands guanylin and uroguanylin along the rostrocaudal axis of the intestine. *Endocrinolog y* **141**: 3210-3224.
29. Goy MF, Oliver PM, Purdy KE, Knowles JW, Fox JE, Mohler PJ, Qian X, Smithies O, and Maeda N (2001) Evidence for a novel natriuretic peptide receptor that prefers brain natriuretic peptide over atrial natriuretic peptide. *Biochemical Journal* **358**: 379-387.
30. Scholz NL, Labenia J, de Vente J, Graubard K, and Goy MF (2002) Expression of nitric oxide synthase and nitric oxide-sensitive guanylate cyclase in the crustacean cardiac ganglion. *J. Comp. Neurol.* **454**: 158-167.
31. Van Staveren WC, Steinbusch HW, Markerink-Van Ittersum M, Repaske DR, Goy MF, Kotera J, Omori K, Beavo JA, De Vente J (2003) mRNA expression patterns of the cGMP-hydrolyzing phosphodiesterases types 2, 5, and 9 during development of the rat brain. *J. Comp. Neurol.* **467**: 566-80.
32. Mahadevan A, Lappe JM, Marder E, and Goy MF (2004) Nitric oxide inhibits the rate and strength of cardiac contractions in the lobster *Homarus americanus* by acting on the cardiac ganglion. *J. Neurosci.* **24**: 2813-2824.
33. Fu Q, Goy MF, Li L (2005) Identification of neuropeptides from the Decapod sinus glands using nanoscale liquid chromatography tandem mass spectrometry *Bioch. Biop. Res. Comm.* **337**: 765-778.
34. Goy MF (2005) Nitric oxide: an inhibitory retrograde modulator in the crustacean heart. *Comp Biochem Physiol A Mol Integr Physiol* **142**: 151-163.

**C. Research Support.** List selected ongoing or completed (during the last three years) research projects (federal and non-federal support). Begin with the projects that are most relevant to the research proposed in this application. Briefly indicate the overall goals of the projects and your role (e.g. PI, Co-Investigator, Consultant) in the research project. Do not list award amounts or percent effort in projects.

Ongoing Research Support

5-P30-DK34987-17 Sandler (PI) 12/1/99 – 11/30/04
NIH
Center for Gastrointestinal Biology and Disease
The goal of the Center is to promote and enhance multidisciplinary digestive disease research.
Role: Director of Immunotechnologies Core Facility

#0236320 Goy (PI) 8/1/03 – 7/31/07 (one year no-cost extension)
NSF
Target-Dependent Feedback Regulation of Neural Activity
This project investigates muscle-to-nerve feedback mechanisms that regulate cardiac function.
Role: PI

HL078980-A1 Goy (PI) 9/1/05-8/31/10
NIH
Intestinal peptides involved in volume homeostasis
This proposal will investigate the hypothesis that uroguanylin is an intestinally-produced natriuretic peptide that activates renal salt excretion in response to oral salt intake.
Role: PI

Pending Research Support

AHA #0555540U Goy (PI) 7/1/07 – 6/30/09
Mid-Atlantic Affiliate of the American Heart Association
Prouroguanylin: The Endocrine Mediator of an Entero-Renal Natriuretic Reflex
This project will investigate the potential protective role of uroguanylin in a rat model of kidney failure.
Role: PI