Stanford

Mary Hynes

Associate Professor (Research) of Biology

Bio

ACADEMIC APPOINTMENTS

- Associate Professor (Research), Biology
- Member, Bio-X

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Board member, The Nueva School (2017 - present)

PATENTS

- Klein, Robert D., Rosenthal, Arnon, Hynes, Mary A.. "United States Patent 6777196 Klein, Robert D., Rosenthal, Arnon, Hynes, Mary A.", Genentech Inc, Aug 17, 2004
- Klein, Robert D., Rosenthal, Arnon, Hynes, Mary A.. "United States Patent 6342348 Neurturin receptor", Genentech Inc, Jan 29, 2002
- Hynes, Mary A., Ye, Weilan. "United States Patent 6277820 Method of dopaminergic and serotonergic neuron formation from neuroprogenitor cells", Genentech Inc, Aug 21, 2001
- Klein, Robert D., Rosenthal, Arnon, Hynes, Mary A.. "United States Patent 6025157 NTNRα, NTNRα extracellular domain (ECD), NTNRα variants, chimeric NTNRα (e.g., NTNRα immunoadhesion), and antibodies which bind thereto (including agonist and neutralizing antibodies) are disclosed. Various uses for these molecules are described.", Genentech Inc, Feb 15, 2000

LINKS

- My Lab Site: https://mary-hynes-jf35.squarespace.com

Teaching

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Jeffrey Naftaly, Wendy Trieu

Postdoctoral Faculty Sponsor

Mengmeng Song, Albert Wang

Publications

PUBLICATIONS

- **Distinct expression of select and transcriptome-wide isolated 3'UTRs suggests critical roles in development and transition states.** *PloS one*

  Ji, S., Yang, Z., Gozali, L., Kenney, T., Kocabas, A., Jinsook Park, C., Hynes, M.

  2021; 16 (5): e0250669

- **Widespread Differential Expression of Coding Region and 3 ' UTR Sequences in Neurons and Other Tissues** *NEURON*
  Kocabas, A., Duarte, T., Kumar, S., Hynes, M. A.
  2015; 88 (6): 1149-1156

- **Evidence for topographic guidance of dopaminergic axons by differential Netrin-1 expression in the striatum** *MOLECULAR AND CELLULAR NEUROSCIENCE*
  Li, J., Duarte, T., Kocabas, A., Works, M., McConnell, S. K., Hynes, M. A.
  2014; 61: 85-96

- **Characterization of axon guidance cue sensitivity of human embryonic stem cell-derived dopaminergic neurons** *MOLECULAR AND CELLULAR NEUROSCIENCE*
  Cord, B. J., Li, J., Works, M., McConnell, S. K., Palmer, T., Hynes, M. A.
  2010; 45 (4): 324-334

- **Gene targeting using a promoterless gene trap vector ("targeted trapping") is an efficient method to mutate a large fraction of genes** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
  Friedel, R. H., Plump, A., Lu, X. W., Spilker, K., Jolicoeur, C., Wong, K., Venkatesh, T. R., Yaron, A., Hynes, M., Chen, B., Okada, A., McConnell, S. K., Rayburn, et al
  2005; 102 (37): 13188-13193

- **Embryonic stern cells go dopaminergic** *NEURON*
  Hynes, M., Rosenthal, A.
  2000; 28 (1): 11–14

- **Broad specificity of GDNF family receptors GFR alpha 1 and GFR alpha 2 for GDNF and NTN in neurons and transfected cells** *JOURNAL OF NEUROSCIENCE RESEARCH*
  Wang, L. C., Shih, A., Hongo, J., Devaux, B., Hynes, M.
  2000; 61 (1): 1–9

- **Mice lacking alpha-synuclein display functional deficits in the nigrostriatal dopamine system** *NEURON*
  Abeliovich, A., Schmitz, Y., Farinas, I., Choi-Lundberg, D., Ho, W. H., Castillo, P. E., Shinsky, N., Verdugo, J. M., Armanini, M., Ryan, A., Hynes, M., Phillips, H., Sulzer, et al
  2000; 25 (1): 239-252

- **The seven-transmembrane receptor Smoothened cell-autonomously induces multiple ventral cell types** *NATURE NEUROSCIENCE*
  Hynes, M., Ye, W. L., Wang, K., Stone, D., Murone, M., de Sauvage, F., Rosenthal, A.
  2000; 3 (1): 41–46

- **Signalling by the RET receptor tyrosine kinase and its role in the development of the mammalian enteric nervous system** *DEVELOPMENT*
  Taraviras, S., Marcos-Gutierrez, C. V., Durbec, P., Jani, H., Grigoriou, M., Sukumaran, M., Wang, L. C., Hynes, M., Raisman, G., Pachnis
  1999; 126 (12): 2785–97

- **Neurturin exerts potent actions on survival and function of midbrain dopaminergic neurons** *JOURNAL OF NEUROSCIENCE*
  Horger, B. A., Nishimura, M. C., Armanini, M. P., Wang, L. C., Poulsen, K. T., Rosenblad, C., Kirik, D., Moffat, B., Simmons, L., Johnson, E., Milbrandt, J., Rosenthal, A., Bjorklund, et al
  1998; 18 (13): 4929–37

- **GFR alpha 1 is an essential receptor component for GDNF in the developing nervous system and kidney** *NEURON*
  Cacalano, G., Farinas, Wang, L. C., Hagler, K., Forgie, A., Moore, M., Armanini, M., Phillips, H., Ryan, A. M., Reichardt, L. F., Hynes, M., Davies, A., Rosenthal, A.
  1998; 21 (1): 53–62

- **FGF and Shh signals control dopaminergic and serotonergic cell fate in the anterior neural plate** *CELL*
  Ye, W. L., Shimamura, K., Rubenstein, J. L., Hynes, M. A., Rosenthal, A.
  1998; 93 (5): 755-766

- **Persephin, a novel neurotrophic factor related to GDNF and neurturin** *NEURON*
  Milbrandt, J., de Sauvage, F. J., Fahrner, T. J., Baloh, R. H., Leitner, M. L., Tansey, M. G., Lampe, P. A., Heuckeroth, R. O., Kotzbauer, P. T., Simburger, K. S., Golden, J. P., Davies, J. A., Vejsada, et al
  1998; 20 (2): 245–53

- **Activating Smoothened mutations in sporadic basal-cell carcinoma** *NATURE*
  Xie, J. W., Murone, M., Luoh, S. M., Ryan, A., Gu, Q. M., Zhang, C. H., Bonifas, J. M., Lam, C. W., Hynes, M., Goddard, A., Rosenthal, A., Epstein, E. H., de Sauvage, et al
  1998; 391 (6662): 90–92

- **Control of cell pattern in the neural tube by the zinc finger transcription factor and oncogene Gli-1** *NEURON*
  Hynes, M., Stone, D. M., Dowd, M., PittsMeek, S., Goddard, A., Gurney, A., Rosenthal, A.
  1997; 19 (1): 15–26

- **The tumour-suppressor gene patched encodes a candidate receptor for Sonic hedgehog** *NATURE*
  Stone, D. M., Hynes, M., Armanini, M., Swanson, T. A., Gu, Q. M., Johnson, R. L., Scott, M. P., Pennica, D., Goddard, A., Phillips, H., Noll, M., Hooper, J. E., DeSauvage, et al
  1996; 384 (6605): 129-134

- **INDUCTION OF MIDBRAIN DOPAMINERGIC-NEURONS BY SONIC HEDGEHOG** *NEURON*
  Hynes, M., Porter, J. A., Chiang, C., Chang, D., TESSIERLAVIGNE, M., Beachy, P. A., Rosenthal, A.
  1995; 15 (1): 35-44

- **CONTROL OF NEURONAL DIVERSITY BY THE FLOOR PLATE - CONTACT-MEDIATED INDUCTION OF MIDBRAIN DOPAMINERGIC-NEURONS** *CELL*
  Hynes, M., Poulsen, K., TESSIERLAVIGNE, M., Rosenthal, A.
  1995; 80 (1): 95-101

- **TGF-BETA-2 AND TCF-BETA-3 ARE POTENT SURVIVAL FACTORS FOR MIDBRAIN DOPAMINERGIC-NEURONS** *NEURON*
  POULSEN, K. T., ARMANINI, M. P., KLEIN, R. D., HYNES, M. A., PHILLIPS, H. S., ROSENTHAL, A.
  1994; 13 (5): 1245–52

- **TAG-1 CAN MEDIATE HOMOPHILIC BINDING, BUT NEURITE OUTGROWTH ON TAG-1 REQUIRES AN L1-LIKE MOLECULE AND BETA-1 INTEGRINS** *NEURON*
  FELSENFELD, D. P., HYNES, M. A., SKOLER, K. M., FURLEY, A. J., JESSELL, T. M.
  1994; 12 (3): 675–90

- **NEUROTROPHIN-4/5 IS A SURVIVAL FACTOR FOR EMBRYONIC MIDBRAIN DOPAMINERGIC-NEURONS IN ENRICHED CULTURES** *JOURNAL OF NEUROSCIENCE RESEARCH*
  HYNES, M. A., POULSEN, K., ARMANINI, M., BERKEMEIER, L., PHILLIPS, H., ROSENTHAL, A.
  1994; 37 (1): 144–54

- **ONTOGENY OF GLUCAGON MESSENGER-RNA AND ENCODED PRECURSOR IN THE RAT INTESTINE** *REGULATORY PEPTIDES*
  JIN, S. L., HYNES, M. A., LUND, P. K.
  1990; 29 (2-3): 117–31

- **SELECTIVE EXPRESSION OF AN ENDOGENOUS LACTOSE-BINDING LECTIN GENE IN SUBSETS OF CENTRAL AND PERIPHERAL NEURONS** *JOURNAL OF NEUROSCIENCE*
  HYNES, M. A., GITT, M., BARONDES, S. H., JESSELL, T. M., BUCK, L. B.
  1990; 10 (3): 1004–13

- **In situ hybridization using 32P labelled oligodeoxyribonucleotides for the cellular localization of mRNA in neuronal and endocrine tissue. An analysis of procedural variables.** *Histochemistry*
  Priestly, J.
  1988

- **INSULIN-LIKE GROWTH FACTOR-II MESSENGER RIBONUCLEIC-ACIDS ARE SYNTHESIZED IN THE CHOROID-PLEXUS OF THE RAT-BRAIN** *MOLECULAR ENDOCRINOLOGY*
  HYNES, M. A., BROOKS, P. J., VANWYK, J. J., LUND, P. K.
  1988; 2 (1): 47–54

- **Characterization, localization and regulation of extrapancreatic proglucagon mRNAs.** *Biomedical Research*
  Hynes, M. A.
  1988

- **ISOLATION OF RAT TESTIS CDNAS ENCODING AN INSULIN-LIKE GROWTH FACTOR-I PRECURSOR** *DNA-A JOURNAL OF MOLECULAR & CELLULAR BIOLOGY*
  CASELLA, S. J., SMITH, E. P., VANWYK, J. J., JOSEPH, D. R., HYNES, M. A., HOYT, E. C., LUND, P. K.
  1987; 6 (4): 325–30

- **GROWTH-HORMONE DEPENDENCE OF SOMATOMEDIN-C INSULIN-LIKE GROWTH FACTOR-I AND INSULIN-LIKE GROWTH FACTOR-II MESSENGER RIBONUCLEIC-ACIDS** *MOLECULAR ENDOCRINOLOGY*
  HYNES, M. A., VANWYK, J. J., BROOKS, P. J., DERCOLE, A. J., JANSEN, M., LUND, P. K.
  1987; 1 (3): 233–42

- **INVOLVEMENT OF N-METHYL-D-ASPARTATE RECEPTORS IN EPILEPTIFORM BURSTING IN THE RAT HIPPOCAMPAL SLICE** *JOURNAL OF PHYSIOLOGY-LONDON*
  DINGLEDINE, R., HYNES, M. A., KING, G. L.
  1986; 380: 175–89

- **Somatomedin-C/IGF-I and IGF-II mRNAs in rat fetal and adult tissues** *Journal of Biological Chemistry*
  Lund, P.
  1986

- **Cellular localization of Proglucagon/Glucagon -like peptide I mRNAs in Rat Brain** *Journal of Neuroscience Research*
  Han, V.
  1986

- **DIRECT ACTION OF MAZINDOL ON GUINEA-PIG VENTROMEDIAL HYPOTHALAMIC NEURONS - INTRACELLULAR STUDIES IN SLICE PREPARATION** *BRAIN RESEARCH BULLETIN*
  MINAMI, T., OOMURA, Y., SUGIMORI, M., HYNES, M.
  1985; 15 (1): 29–31

- **CORTICOTROPIN RELEASING-FACTOR (CRF) - ORIGIN AND COURSE OF AFFERENT PATHWAYS TO THE MEDIAN-EMINENCE (ME) OF THE RAT HYPOTHALAMUS** *NEUROENDOCRINOLOGY*
  MERCHENTHALER, HYNES, M. A., VIGH, S., SCHALLY, A. V., PETRUSZ, P.
  1984; 39 (4): 296–306

- **CHOLINERGIC ROLE IN MONKEY DORSOLATERAL PREFRONTAL CORTEX DURING BAR-PRESS FEEDING-BEHAVIOR** *BRAIN RESEARCH*
  INOUE, M., OOMURA, Y., NISHINO, H., AOU, S., SIKDAR, S. K., HYNES, M., MIZUNO, Y., KATABUCHI, T.
  1983; 278 (1-2): 185–94

- **IMMUNOCYTOCHEMICAL LOCALIZATION OF CORTICOTROPIN RELEASING-FACTOR (CRF) IN THE RAT SPINAL-CORD** *BRAIN RESEARCH*
  MERCHENTHALER, HYNES, M. A., VIGH, S., SHALLY, A. V., PETRUSZ, P.
  1983; 275 (2): 373–77

- **SYSTEMIC AND INTRAVENTRICULAR NALOXONE ADMINISTRATION - EFFECTS ON FOOD AND WATER-INTAKE** *BEHAVIORAL AND NEURAL BIOLOGY*
  HYNES, M. A., GALLAGHER, M., YACOS, K. V.
  1981; 32 (3): 334–42