



Brief Career History

1970 BSc University of British Columbia
 1977 PhD University of British Columbia
 1977-79 Killam Postdoctoral Fellow, University of Alberta
 1980-84 Assistant Professor, University of Alberta and NSERC University Research Fellow
 1984-88 Associate Professor, University of Alberta
 1988-2011 Professor, University of Alberta
 2011-now Professor Emeritus, University of Alberta

Example of Recognition by Peers

20 Invited book chapters and reviews

Over 60 major invited presentations including:

Intl Cong Fish Biol
 Intl Symp Reprod Physiol Fish
 NATO/EC Wksp Fish Pheromones
 Intl Symp Chem Signals Vertebrates
 Intl Symp Fish Physiol, Toxicol, Mgmt

Intl Cong Comp Endo
 Physiol Soc (UK)
 Euro Soc Comp Physiol Bioch
 Intl Symp Reprod Biol Aqua
 Soc Exper Biol

Example Highlights of Research Contribution

Discovering the mechanism regulating female spawning behavior in oviparous fishes

Stacey & Liley (1974) Regulation of spawning behavior in the female goldfish. *Nature* 247: 71-72
 Stacey (1976) Effects of indomethacin and prostaglandins on spawning behavior of female goldfish. *Prostaglandins* 12: 113-126

Pioneering studies that showed released hormones (steroids and prostaglandins) can function as sex pheromones (hormonal pheromones) that synchronize spawning through behavioral and endocrine effects

Dulka, Stacey, Sorensen & Van Der Kraak (1987) A sex steroid pheromone synchronizes male-female spawning readiness in goldfish. *Nature* 325: 251-253
 Sorensen, Hara, Stacey & Goetz (1988) F prostaglandins function as potent olfactory stimulants that comprise the postovulatory female sex pheromone in goldfish. *Biol. Reprod.* 39:1039-1050

Elucidating neuroendocrine mechanisms mediating hormonal pheromone effects

Zheng & Stacey (1996) Two mechanisms for increasing milt volume in male goldfish, *Carassius auratus*. *J. Exp. Zool.* 276: 287-295
 Zheng & Stacey (1997) A steroidal pheromone and spawning stimuli act via different neuroendocrine mechanisms to increase gonadotropin and milt volume in male goldfish, *Carassius auratus*. *Gen. Comp. Endocrinol.* 105:228-238

Demonstrating fitness effects of hormonal pheromones

Zheng, Strobeck & Stacey (1997) The steroid pheromone 17 α ,20 β -dihydroxy-4-pregnen-3-one increases fertility and paternity in goldfish. *J. Exp. Biol.* 200: 2833-2840

Discovering novel male-male effects on sperm production

Fraser & Stacey (2002) Isolation increases milt production in goldfish. *J. Exp. Zool.* 293: 511-24

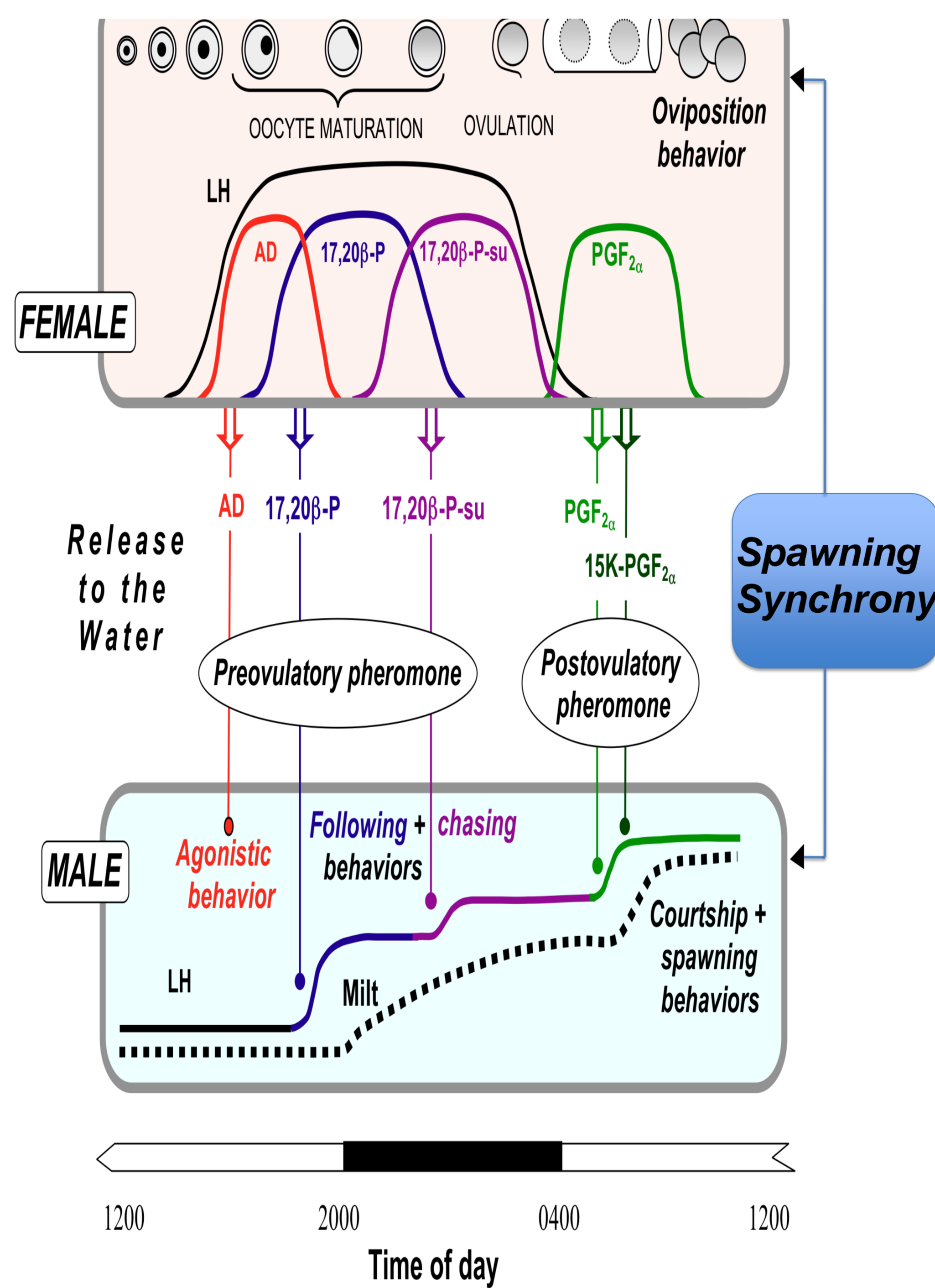
Demonstrating that androgens enhance hormonal pheromone detection

Cardwell, Stacey, Lang, McAdam & Tan (1995) Androgen increases olfactory receptor response to a prostaglandin pheromone in a vertebrate. *J. Comp. Physiol. A* 176: 55-61
 Belanger, Pachkowski & Stacey (2010) Methyltestosterone-induced changes in electro-olfactogram responses and courtship behaviors of cyprinids. *Chem. Senses* 35: 65-74

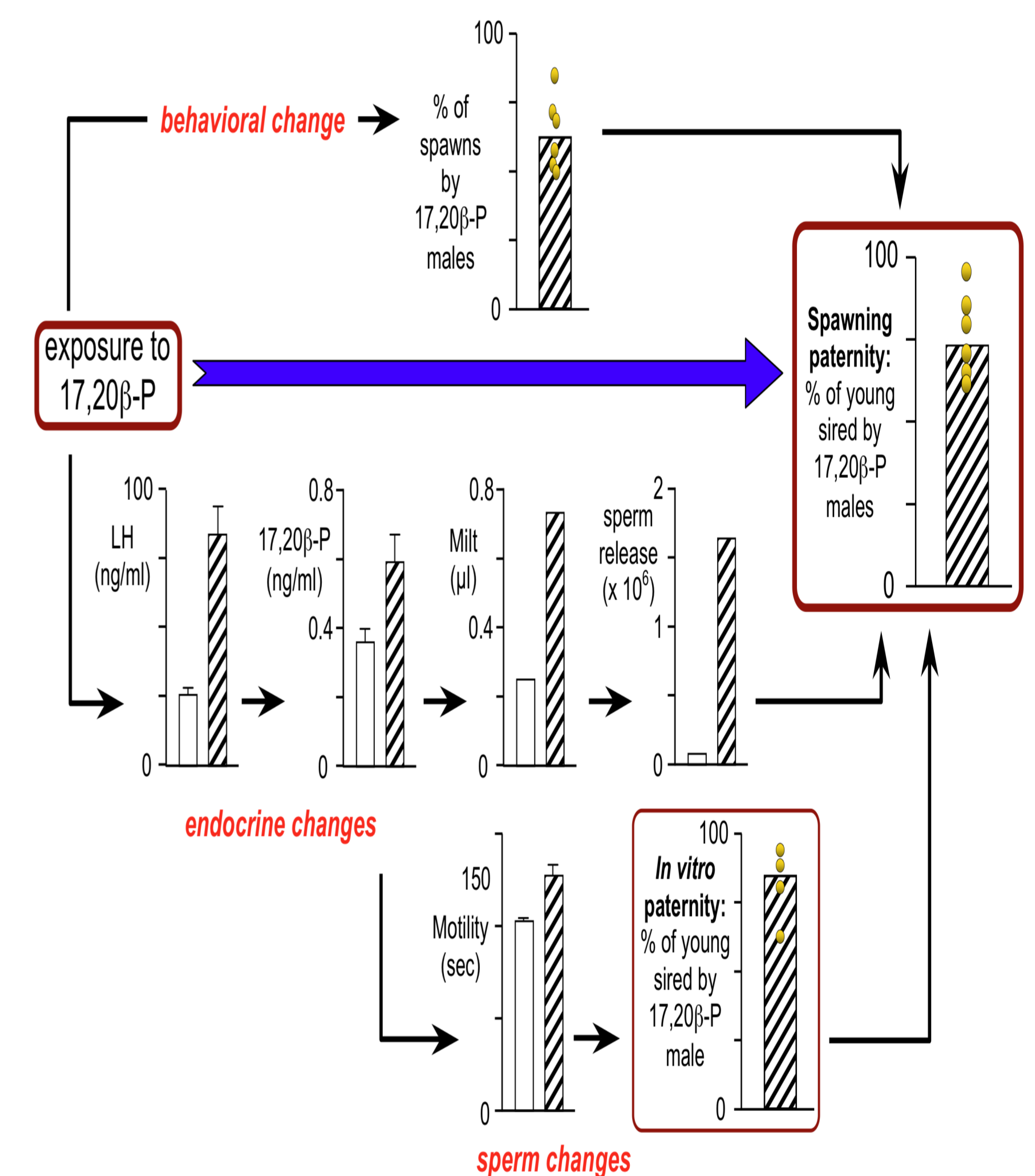
Integrating endocrinology, pheromones and behaviour of fishes from an evolutionary perspective

Stacey (2010) Hormonally-derived sex pheromones in fish. In "Hormones and Reproduction in Vertebrates: Vol. 1 Fishes". Norris & Lopez, eds. Pp. 169-192, Elsevier, San Diego

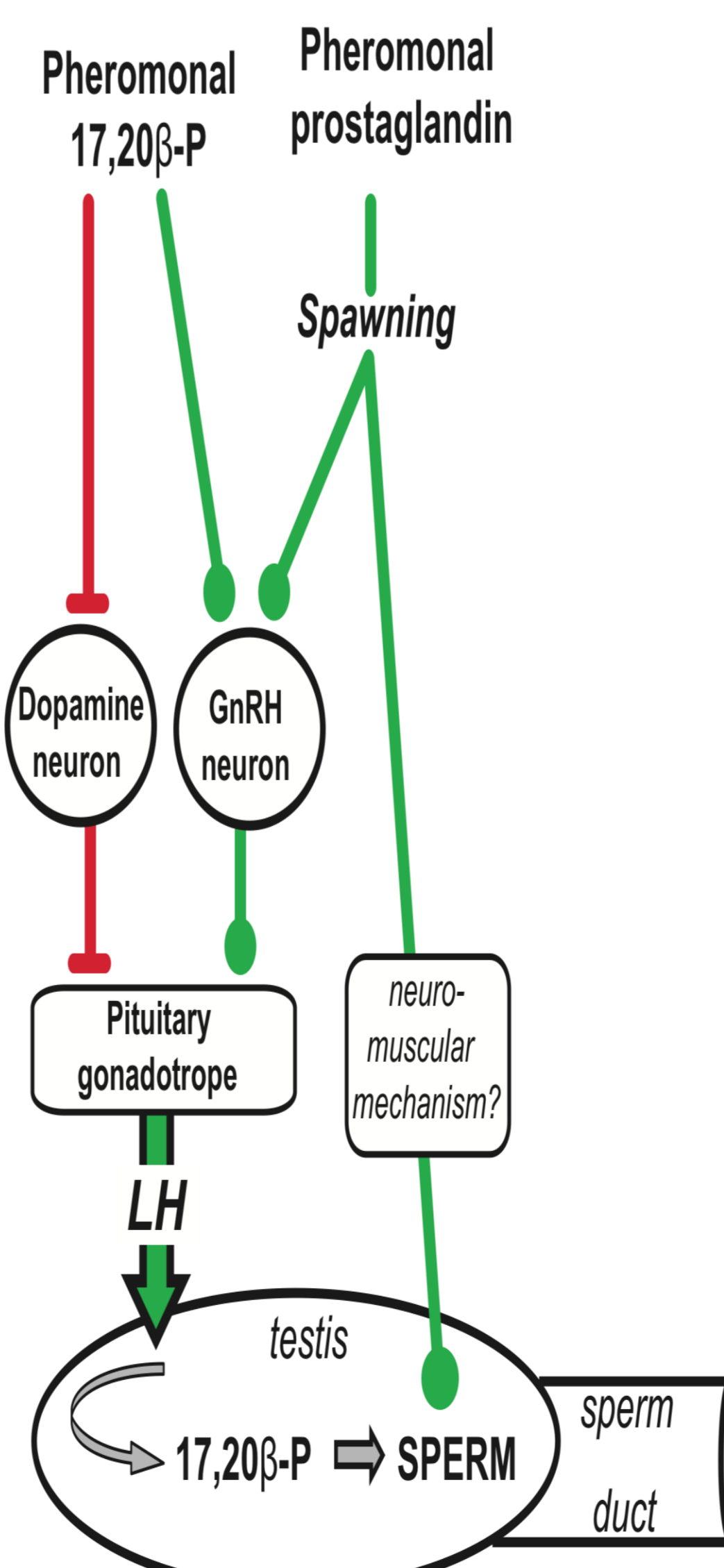
Effects of female hormonal pheromones on males



Enhancement of paternity by pheromones in males



Mechanisms of hormonal pheromone effects on sperm production



Model of goldfish pheromone-mediated synchronization of mass spawning

