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Dear PNAS editorial board,

This cover accompanies our manuscript entitled “Natural genetic variation in the pheromone production of *C. elegans*” for your consideration as an article in the *Proceedings of the National Academy of Sciences*. Pheromones are intriguing substances that animal species use for chemical communication in social and sexual interactions. Although different pheromone compounds are described across divergent animal species, little is known about how chemical languages evolve. To study the genetic basis underlying natural diversity in animal chemical language, we analyzed the secreted metabolomes of 95 whole-genome sequenced wild *C. elegans* strains. With this dataset, we characterized natural variation in the production of 44 ascarosides (the nematode’s primary pheromone class). Our quantitative genetic analyses uncovered genomic loci that broadly or specifically impact the production of diverse ascarosides. Furthermore, we identified genetic variants in key enzymes that regulate fatty acid metabolism and are associated with natural differences in pheromone production. Our findings provide insights into how metabolism and chemical communication evolve.

In addition to members of the editorial board and National Academy, we recommend the following international leaders in the fields of quantitative genetics and nematode chemical communication as reviewers: Ralf Sommer (MPI - Biology), Marie-Anne Félix (IBENS), Janna Fierst (FIT), Gavin Woodruff (Univ. of Oklahoma), Mark Blaxter (Sanger Institute), Chris Braendle (iBV), Eric Haag (Univ. of Maryland), Paul Sternberg (Caltech), Yen-Ping Hseuh (Academia Sinica), Jan Kammenga (WUR), Young-Ki Paik (Yonsei University), Jagan Srinivasan (WPI), Mark G. Sterken (WUR) or Asher Cutter (Univ. of Toronto). We would like to exclude Rebecca A. Butcher (Univ. of Florida) as a reviewer because of overlapping research directions and direct competition. This manuscript is not in press or under consideration elsewhere. All coauthors have approved the manuscript.

Sincerely,
Erik C. Andersen