**Claire de la Cova, PhD**
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## Education

**Ph.D. (May 2008)** Dept. of Genetics and Development, Columbia University, New York, NY

**M.Phil. (Oct 2003)** Dept. of Genetics and Development, Columbia University, New York, NY

**M.A. (Oct 2001)** Dept. of Genetics and Development, Columbia University, New York, NY

**B.A. (May 1999)** Dept. of Biology, Macalester College, Saint Paul, MN

## Appointments

**Assistant Professor,** 2018 – present
Dept. of Biological Sciences, University of Wisconsin-Milwaukee, Milwaukee, WI

## Training

**Postdoctoral Training/Associate**, 2008 – 2018
Dept. of Biological Sciences, Columbia University, New York, NY
Research mentor: Dr. Iva Greenwald

**Graduate Training**, 2000 – 2008
Dept. of Genetics, Columbia University Medical Center, New York, NY
Thesis mentor: Dr. Laura Johnston
Thesis title: Control of Growth and Cell Competition by dMyc in *Drosophila melanogaster*.

## Research Support

**Discovery and Innovation Grant**, University of Wisconsin, 2024 – 2025. PI: Claire de la Cova
Conserved kinase and phosphatase regulators of RAF signaling in Noonan Syndrome.

**R03**, NIH/NCI R03CA248684, 2021 – 2023. PI: Claire de la Cova
Mechanisms of protein degradation that control signal transduction by Ras-Raf-MEK-ERK.

**Discovery and Innovation Grant**, University of Wisconsin, 2020 – 2022. PI: Claire de la Cova
Investigation of UFD-2-mediated regulation of Ras/MAP kinase signaling.

## Awards and Honors

2024 Nominated Research Mentor of the Year, UW-Milwaukee.
2002 Cell, Molecular, and Developmental Training Grant, Columbia University Herbert Irving Comprehensive Cancer Center.
1996 Howard Hughes Fellowship for Undergraduates, Macalester College.

## Teaching

**Genetics of Development and Cancer** (BIO SCI 498), UW-Milwaukee. Instructor, 2020 – present.

**Genetics** (BIO SCI 325). UW-Milwaukee. Instructor, 2019 – present.

**Graduate Seminar** (BIO SCI 925). UW-Milwaukee. Instructor, 2019, 2023 – present.

**Genetics** (BIOL 3031). Dept. of Biological Sciences, Columbia University. Co-instructor, 2017 – 2018.

## Professional Organizations

Genetics Society of America, Member
Society of Developmental Biology, Member

## Conference Presentations (Since 2018 Appointment at UWM, *Presenter)

Cheraghi F* and de la Cova CC. Using *Caenorhabditis elegans* to test the impact of 14-3-3 on Raf protein levels and localization. 2024 National Diversity in STEM Conference. Phoenix, Arizona. Oct 2024. (Podium)

Rodriguez Torres CS*, Wicker NB, Voisine Cindy, Lo T, Stern MJ, de la Cova CC. The *Caenorhabditis elegans* protein SOC-3 permits an alternative mode of signal transduction by the EGL-15 FGF receptor. 2024 National Diversity in STEM Conference. Phoenix, Arizona. Oct 2024. (Poster)

Miller J*, Cheraghi F, de la Cova CC. Generation of Raf Mutants in *C. elegans* to model Noonan Syndrome. Wisconsin Science Education and Research Consortium Conference. Milwaukee, Wisconsin. Oct 2024. (Poster)

Rodriguez Torres CS, Wicker NB, Puccini de Castro V, Stefinko M, Bennett DC, Bernhardt B, Garcia Montes de Oca M, Jallow S, Flitcroft K, Palalay JS, Payán Parra OA, Stern YE, Koelle M, Voisine Cindy, Woods IG, Lo T, Stern MJ, de la Cova CC*. The *Caenorhabditis elegans* protein SOC-3 permits an alternative mode of signal transduction by the EGL-15 FGF receptor. 2024 Society of Developmental Biology Midwest Regional Meeting. Madison, Wisconsin. Aug 2024. (Podium)

Cheraghi F*, Townley R, Pagel A, Vakili P, Miller JM, de la Cova CC. Using *Caenorhabditis elegans* to test the impact of mutations from Noonan Syndrome. 2024 Society of Developmental Biology Midwest Regional Meeting. Madison, Wisconsin. Aug 2024. (Poster)

Cheraghi F* and de la Cova CC. Using *Caenorhabditis elegans* to test the impact of 14-3-3 on Raf protein levels and localization. UWM Biological Sciences Research Symposium. Milwaukee, Wisconsin. Apr 2024 (Podium)

Pagel A*, Townley R, Cheraghi F[1], de la Cova CC. Generating a model of Noonan syndrome mutations in *C. elegans* Raf. UWM Biological Sciences Research Symposium and 17th Annual UWM Undergraduate Research Symposium. Milwaukee, Wisconsin. Apr 2024. (Poster)

Flitcroft K*, Rodriguez Torres CS, Wicker NB, Stern MJ, de la Cova CC. Cell specific mechanisms of Fibroblast Growth Factor Signaling in *C. elegans*. UWM Biological Sciences Research Symposium and 17th Annual UWM Undergraduate Research Symposium. Milwaukee, Wisconsin. Apr 2024. (Poster)

Vakili SP*, Cheraghi F, de la Cova CC. Using *Caenorhabditis elegans* to test the impact of Cadiofaciocutaneous syndrome mutations. UWM Biological Sciences Research Symposium and 17th Annual UWM Undergraduate Research Symposium. Milwaukee, Wisconsin. Apr 2024. (Poster)

Cheraghi F*, de la Cova CC. Using *C. elegans* to model the impact of mutations from Noonan Syndrome. 4th Chicago Area Worm Meeting. Chicago, Illinois. Nov 2023. (Poster)

Rodriguez Torres CS*, Wicker NB, Voisine C, Stern M, de la Cova CC. Quantitative and genetic approaches to understanding EGL-15 signaling in the sex myoblast and hypodermis. 4th Chicago Area Worm Meeting. Chicago, Illinois. Nov 2023. (Poster)

Rodriguez C*, Wicker N, Lo T, Voisine C, Stern M, de la Cova CC. A novel protein is implicated in *C. elegans* FGFR signal transduction. UWM Biological Sciences Research Symposium. Milwaukee, Wisconsin. Apr 2023 (Podium)

Wicker N*, Rodriguez C, de la Cova CC. Using a real-time biosensor to explore kinase activity in a migratory cell. UWM Biological Sciences Research Symposium. Milwaukee, Wisconsin. Apr 2023 (Poster)

Cheraghi F*, Townley R, Stacy K, Castillo A, de la Cova CC. Using *C. elegans* to model the impact of mutations from Noonan syndrome. UWM Biological Sciences Research Symposium. Milwaukee, Wisconsin. Apr 2023 (Poster)

Stacy KS*, Townley R, Cheraghi F, de la Cova CC. Identification of a novel autoinhibitory domain of LIN-45/Raf. UWM Neuroscience Mini-Symposium for Student Research. Milwaukee, Wisconsin. Nov 2022 (Poster)

Rodriguez Torres CS*, Montes de Oca MG, Lo T-W, Voisine C, Stern M, de la Cova CC. Exploring distinct coupling mechanisms for FGFR signaling in the hypodermis. 2022 National Diversity in STEM Conference. San Juan, Puerto Rico. Oct 2022. (Podium)

Townley R, Stacy KS*, Cheraghi F, de la Cova CC. Identification of a novel autoinhibitory domain of LIN-45/Raf. C. elegans 2022 Development, Cell Biology, and Gene Expression Meeting. Madison, Wisconsin. Aug 2022. (Poster)

Townley R, Deniaud A, Stacy KS, Rodriguez Torres CS, Cheraghi F, de la Cova CC*. The E3/E4 ubiquitin ligase UFD-2 mediates negative feedback on Raf protein stability. C. elegans 2022 Development, Cell Biology, and Gene Expression Meeting. Madison, Wisconsin. Aug 2022. (Poster)

Rodriguez Torres CS*, Montes de Oca MG, Lo T-W, Voisine C, Stern M, de la Cova CC. Exploring distinct coupling mechanisms for FGFR signaling in the hypodermis. C. elegans 2022 Development, Cell Biology, and Gene Expression Meeting. Madison, Wisconsin. Aug 2022. (Poster)

Townley R, Deniaud A, Stacy KS, Rodriguez Torres CS, Cheraghi F, de la Cova C*. Negative regulation of Raf signaling by the E3/E4 ubiquitin ligase UFD-2. 3rd Chicago Area Worm Meeting. Chicago, Illinois. Dec 2021. (Podium)

Rodriguez CS*, Garcia Montes de Oca M, Lo T-W, Voisine C, Stern M, de la Cova C. A quantitative ERK biosensor as a tool to understand FGFR signaling in *C. elegans*. 3rd Chicago Area Worm Meeting. Chicago, Illinois. Dec 2021. (Poster)

Rodriguez CS*, Garcia Montes de Oca M, Lo T-W, Voisine C, Stern M, de la Cova C. A quantitative ERK biosensor as a tool to understand FGFR signaling in *C. elegans*. 2021 National Diversity in STEM Conference. Oct 2021. (Poster)

Garcia Montes de Oca M*, Rodriguez CS, Stefinko M, de la Cova C, Lo T-W, Voisine C, Stern M. Probing the molecular mechanism of receptor tyrosine kinase activation through the analysis of heterodimers of the *C. elegans* FGF receptor, EGL-15. 23rd International C. elegans Conference. Jun 2021. (Poster)

Deniaud A*, Townley R, de la Cova CC. Negative regulation of the protein kinase Raf. UWM Biological Sciences Research Symposium. Milwaukee, Wisconsin. Apr 2020. (Poster)

## Invited Seminars (Since 2018 Appointment at UWM)

Northeastern Illinois University, Dept. of Biology. Chicago, Illinois. Feb 2025. Co-presentation with trainee Claudia Rodriguez. Title: *An alternative mode of signal transduction by the EGL-15 FGF receptor in Caenorhabditis elegans.*

Houston Area Worm Group. Houston, Texas. Oct 2024. Title: *The worm and insights into Raf signaling in disease: protein interactions, localization, and degradation*.

University of Wisconsin-Milwaukee, Dept. of Biological Sciences Colloquium Series. Milwaukee, Wisconsin. Sep 2024. Title: *The very elegant patient: How C. elegans provides insights into Raf signaling in disease.*

Medical College of Wisconsin, Dept. of Cell Biology, Neurobiology, and Anatomy Seminar Series. Milwaukee, Wisconsin. Dec 2023. Title: *Regulation of Raf signaling by protein interactions, localization, and degradation.*

Medical College of Wisconsin, Dept. of Biochemistry Seminar Series. Milwaukee, Wisconsin. Nov 2020. Title: *Genetic and quantitative approaches to investigate Raf and MAP kinase signaling in animal development.*

Marquette University, Dept. of Biological Sciences Scholl Seminar Series. Milwaukee, Wisconsin. Sep 2019. Title: *Visualizing cell communication: Ras/MAP Kinase signaling in animal development.*

University of Wisconsin-Madison, Laboratory for Optical and Computational Instrumentation (LOCI) Group. Madison, Wisconsin. Oct 2018. Title: *Ras/MAP Kinase signaling in animal development: Genetic and live-imaging approaches.*

University of Wisconsin-Milwaukee, Dept. of Biological Sciences Colloquium Series. Milwaukee, Wisconsin. Sep 2018. Title: *Visualizing cell communication: Ras/MAP Kinase signaling in animal development.*

## Publications (*Corresponding Author)

1. Townley R, Stacy KS, Cheraghi F, **de la Cova CC*.** The Raf/LIN-45 C-terminal distal tail segment negatively regulates signaling in *Caenorhabditis elegans.* Genetics. 2024. iyae152. doi: 10.1093/genetics/iyae152.

2. Rodriguez Torres CS, Wicker NB, Puccini de Castro V, Stefinko M, Bennett DC, Bernhardt B, Garcia Montes de Oca M, Jallow S, Flitcroft K, Palalay JS, Payán Parra OA, Stern YE, Koelle M, Voisine Cindy, Woods IG, Lo T, Stern MJ, **de la Cova CC***. The *Caenorhabditis elegans* protein SOC-3 permits an alternative mode of signal transduction by the EGL-15 FGF receptor. Developmental Biology. 2024**.** 516:183-195. doi: 10.1016/j.ydbio.2024.08.014**.**

3. Kodra AL, Sharma Singh A, **de la Cova C**, Ziosi M, Johnston LA*. The Drosophila TNF Eiger promotes Myc super-competition independent of canonical JNK signaling. Genetics. 2024. iyae107. doi: 10.1093/genetics/iyae107.

4. Townley R, Deniaud A, Stacy KS, Rodriguez Torres CS, Cheraghi F, Wicker NB, **de la Cova CC***. The E3/E4 ubiquitin ligase UFD-2 suppresses normal and oncogenic signaling mediated by a Raf ortholog in *Caenorhabditis elegans*. Science Signaling. 2023. 16(800):eabq4355. doi: 10.1126/scisignal.abq4355.

5. **de la Cova CC***. The Highs and Lows of FBXW7: New Insights into Substrate Affinity in Disease and Development. Cells. 2023. 12(17):2141. doi: 10.3390/cells12172141.

6. **de la Cova CC***, Townley R, Greenwald I. Negative feedback by conserved kinases patterns the degradation of *Caenorhabditis elegans* Raf in vulval fate patterning. Development. 2020. 147(24):dev195941. doi: 10.1242/dev.195941.

7. Kodra A, **de la Cova C**, Gerhold AR, Johnston LA*. Widely Used Mutants of *eiger*, Encoding the *Drosophila* Tumor Necrosis Factor, Carry Additional Mutations in the NimrodC1 Phagocytosis Receptor. G3 Genes Genomes Genetics. 2020. 10(12):4707-4712. doi: 10.1534/g3.120.401800.

8. **de la Cova C**, Townley R, Regot S, and Greenwald I*. A real-time biosensor for ERK activity reveals signaling dynamics during *C. elegans* cell fate specification. Developmental Cell. 2017. 42(5):542-553. doi: 10.1016/j.devcel.2017.07.014.

9. Meyer SN, Amoyel M, Bergantiños C, **de la Cova C,** Schertel C, Basler K, Johnston LA*. An ancient defense system eliminates unfit cells from developing tissues during cell competition. Science. 2014. 346(6214):1258236. doi: 10.1126/science.1258236.

10. **de la Cova C,** Senoo-Matsuda N, Ziosi M, Wu DC, Bellosta P, Quinzii CM, Johnston LA*. Supercompetitor status of Drosophila Myc cells requires p53 as a fitness sensor to reprogram metabolism and promote viability. Cell Metabolism. 2014. 19(3):470-483. doi: 10.1016/j.cmet.2014.01.012.

11. **de la Cova C** and Greenwald I*. SEL-10/Fbw7-dependent negative feedback regulation of LIN-45/Braf signaling in *C. elegans* via a conserved phosphodegron. Genes and Development. 2012. 26(22):2524-2535. doi: 10.1101/gad.203703.112.

12. **de la Cova C** and Johnston LA*. Myc in model organisms: a view from the flyroom. Seminars in Cancer Biology. 2006. 16(4):303-312. doi: 10.1016/j.semcancer.2006.07.010.

13. **de la Cova C,** Abril M, Bellosta P, Gallant P, Johnston LA*. Drosophila Myc regulates organ size by inducing cell competition. Cell. 2004. 117(1):107-116. doi: 10.1016/s0092-8674(04)00214-4.