

Name Andrea Ciliberto

2 - Education

1995

2000

MSc in Biology, from the University of Florence with marks: 110/110 cum laude.
PhD in Genetics, from the University of Pavia.

2000-2003

3 - Professional Experience

2003

Research Associate, Dept. Biology, Virginia Tech (USA), in the laboratory of Dr. John Tyson.

2004-2005

Junior Fellow, Institute for Advanced Studies Collegium Budapest.

2005-2013

Research Associate in the "Molecular network dynamics and cell physiology" group of the Hungarian Academy of Sciences. Group directed by Dr. Bela Novak.

Since 2013

Junior Group Leader in Quantitative Biology of Cell Division at IFOM.

2022-2025

Senior (Tenured) Group Leader in Quantitative Biology of Cell Division at IFOM.

Since 2025

Researcher at the Department of Information Technology and Bioinformatics of Pázmány Péter Catholic University in Budapest.

**Teaching
2001**

Full Professor at Pázmány Péter Catholic University in Budapest.

2004-08

4 - Teaching and mentoring experience

Genetics for sophomors, Virginia Tech (USA).
Lecturer for the PhD school in Bioinformatics, Biozentrum, Basel.

Since 2006	Lecturer to PhD students of the SEMM (European School of Molecular Medicine)
2010-2013	Lecturer to the PhD program in Complex Systems (Turin University).
2011-2016	Coordinator of the PhD program in Computational Biology of the SEMM at the IFOM-IEO Campus.
Since 2015	Coordinator of the PhD program in "Fundamentals of Cancer Biology" of IFOM, (associated research center of the Open University.)
Since 2016	Co-organizer of the "IFOM pre-doctoral school in Quantitative Biology"
2018-2024	IFOM coordinator of the PhD program in Chromosome Biology with the University of Galway.
Since 2021	IFOM coordinator of the PhD program in Bioinformatics with Pázmány Péter Catholic University in Budapest.
Since 2022	Co-Organizer of the courses in Systems Biology and Quantitative Biology at
Mentoring PhD students	Supervised 9 PhD students Co-supervised one PhD student of the University of Marseille.
Masters students	Supervised 5 Masters' students to the completion of their studies.

5 - Publications

Papers published in peer-reviewed journals

- [1] Bezzi M., **Ciliberto A.**, and Mengoni A., Pattern formation by competition: a biological example, *J. Biol. Physics*, 25:279-288, 1999.
- [2] **Ciliberto, A.** and Tyson, J. J. Mathematical model for early development of the sea urchin embryo, *Bull. Math. Biol.* 62:37-59, 2000.
- [3] Novak, B., Pataki, Zs., **Ciliberto A.** and Tyson, J. J. Mathematical model of the cell division cycle of fission yeast. *Chaos*, 11:277-286, 2001
- [4] **Ciliberto, A.**, Petrus, M. J., Tyson, J. J. and Sible J. C., A kinetic model of the Cyclin E/Cdk2 developmental timer in *Xenopus laevis* embryos, *Biophys. Chem.*, 104:573-89, 2003.
- [5] Bezzi, M. and **Ciliberto, A.**, Modeling growth of filamentous organisms, *Comments on Theoretical Biology*, 8:563-585, 2003.
- [6] **Ciliberto, A.**, Novak, B. and Tyson J. J., Mathematical model of the morphogenesis checkpoint in budding yeast, *J. Cell Biol.*, 163:1243:54, 2003.
- [7] **Ciliberto, A.**, Novak, B., Tyson, J.J., Steady states and oscillations in the p53/Mdm2 network, *Cell Cycle* 4:488-93, 2005.
- [8] **Ciliberto, A.**, Lukacs, A., Toth, A., Tyson, J.J., Novak, B. Rewiring the exit from mitosis. *Cell Cycle*, 4:1107-12, 2005.
- [9] Vink, M., Simonetta, M., Transidico, P., Ferrari, K., Mapelli, M., De Antoni, A., Massimiliano, L., **Ciliberto, A.**, Faretta, M., Salmon, E.D., Musacchio, A., In vitro FRAP identifies the minimal requirements for Mad2 kinetochore dynamics, *Curr Biol*, 16:755-66, 2006.
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- Berhoerster, K., Kreienkamp, H.J., Milanesi, F., DiFiore, P.P., **Ciliberto, A.**, Stradal, T.E., Scita, G. Regulation of cell shape by Cdc42 is mediated by the synergic actin-bundling activity of the Eps8-IRSp53 complex, *Nat Cell Biol*, 8:1337-1347, 2006.
- [11] **Ciliberto, A***, Capuani, F. and Tyson, J. J. Modeling Networks of Coupled Enzymatic Reactions Using the Total Quasi-Steady State Approximation. *PLoS Comp. Biol.* 3(3), e45, 2007. *Corresponding Author.
- [12] Sabouri-Ghomi, M., **Ciliberto, A.**, Kar, S., Novak, B. and Tyson, J. J., Antagonism and bistability in protein-interaction networks, *Journal of Theoretical Biology*, 250:209-218, 2008.
- [13] Rambaldi, D., Di Giorgi, F. M., Capuani, F., **Ciliberto, A.** and Ciccarelli D. F., Low duplicability and network fragility of cancer genes, *Trends in Genetics*, 427:30-24, 2008.
- [14] Simonetta, M., Manzoni, M., Mosca, R., Mapelli, M., Massimiliano, L., Vink, M., Novak, B., Musacchio, A. and **Ciliberto A.**, The influence of catalysis on Mad2 activation dynamics, *PLoS Biology*, 7(1), e1000010, 2009.
- [15] **Ciliberto, A*** and Shah J.V.*, A quantitative systems view of the Spindle Assembly Checkpoint, *EMBO Journal*, 28:2162-73, 2009. *Corresponding Authors.
- [16] Faure, A., Naldi, A., Lopez, F., Chaouiya, C., **Ciliberto, A.** and Thieffry, D. Modular logical modeling of the budding yeast cell cycle, *Mol Biosyst.*, 5:1787-96, 2009.
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- [18] Wolkenhauer O, Auffray C, Baltrusch S, Blüthgen N, Byrne H, Cascante M, **Ciliberto A**, Dale T, Drasdo D, Fell D, Ferrell JE Jr, Gallahan D, Gatenby R, Günther U, Harms BD, Herzog H, Junghanss C, Kunz M, van Leeuwen I, Lenormand P, Levi F, Linnebacher M, Lowengrub J, Maini PK, Malik A, Rateitschak K, Sansom O, Schäfer R, Schürle K, Sers C, Schnell S, Shibata D, Tyson J, Vera J, White M, Zhivotovsky B, Jaster R. Systems biologists seek fuller integration of systems biology approaches in new cancer research programs. *Cancer Res.* 2010 Jan 1;70(1):12-3.
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- [20] Vinod PK, Freire P, Rattani A, **Ciliberto A**, Uhlmann F, Novak B., Computational modelling of mitotic exit in budding yeast: the role of separase and Cdc14 endocycles, *J. R. Soc. Interface*, 8:1128-41 2011.
- [21] Santaguida S, Vernieri C, Villa F, **Ciliberto A.**, Musacchio A., Evidence that Aurora B is implicated in spindle checkpoint signalling independently of error correction, *EMBO Journal*, 30:1508-1519, 2011.
- [22] Vaggi F, Disanza A, Milanesi F, Di Fiore PP, Menna E, Matteoli M, Gov NS, Scita G, **Ciliberto A.**, The Eps8/IRSp53/VASP network differentially controls actin capping and bundling in filopodia formation., *PLoS Comp Biol.*, 7:e1002088, 2011.
- [23] Sigismund S, Confalonieri S, **Ciliberto A**, Polo S, Scita G, Di Fiore PP. Endocytosis and signaling: cell logistics shape the eukaryotic cell plan. *Physiol Rev.* 92:273-366, 2012.
- [24] Mariani L, Chiroli E, Nezi L, Muller H, Piatti S, Musacchio A, **Ciliberto A.** Role of the Mad2 Dimerization Interface in the Spindle Assembly Checkpoint Independent of Kinetochores. *Curr Biol.*, 22:1-9, 2012.
- [25] Musacchio, A. and **Ciliberto, A.**, The spindle assembly checkpoint: the beauty of self-destruction, *Nat Struct Mol Biol*, 19:1059-1061, 2012.

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- [28] Primorac I, Weir JR, Chiroli E, Gross F, Hoffmann I, van Gerwen S, **Ciliberto A**, Musacchio A., Bub3 reads phosphorylated MELT repeats to promote spindle assembly checkpoint signaling, *Elife*, Sep 24;2:e01030, 2013
- [29] Capuani F, Conte A, Argenzio E, Marchetti L, Priami C, Polo S, Di Fiore PP, Sigismund S, **Ciliberto A**. Quantitative analysis reveals how EGFR activation and downregulation are coupled in normal but not in cancer cells. *Nat Commun.* 6:7999, 2015
- [30] Brnzei D, **Ciliberto A**. Not all roads lead to Cdk1. *Cell Cycle.* 16:395-396. 2017
- [31] **Ciliberto A**, Hauf S. Micromanaging checkpoint proteins. *Elife.* 6. pii: e25001, 2017
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- [37] Pavani M, Bonaiuti P, Chiroli E, Gross F, Natali F, Macaluso F, Póti Á, Pasqualato S, Farkas Z, Pompei S, Cosentino Lagomarsino M, Rancati G, Szüts D, **Ciliberto A**, Epistasis, aneuploidy and functional mutations underlie evolution of resistance to induced microtubule depolymerization, *EMBO J.* 40(22):e108225, 2021
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migration causes aberrant mitoses and c-MYC amplification. Proc Natl Acad Sci U S A. 2024 Jul 16;121(29):e2404551121.

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[43] Stier AB, Bonaiuti P, Juhász J, Gross F, **Ciliberto A**, Increased risk of slippage upon disengagement of the mitotic checkpoint. PLoS Comput Biol. 2025; 21(3):e1012879.

Book Chapters

Ciliberto A and Visintin R, "MITOSIS: The Great Divide", in Encyclopedia of Systems Biology (eds. Dubitzky W. Wolkenhauer O. Cho K. & Yokota H.) Springer, DOI 10.1007/978-1-4419-9863-7

Ciliberto A and Shah J, "Cell Cycle Signaling, Spindle Assembly Checkpoint", in Encyclopedia of Systems Biology (eds. Dubitzky W. Wolkenhauer O. Cho K. & Yokota H.) Springer, DOI 10.1007/978-1-4419-9863-7

7- Editorial activity

Regular reviewer for Journal of Theoretical Biology, BMC Bioinformatics, PLoS Computational Biology, Molecular Systems Biology, Nature Communications

Academic Editor for PLoS Computational Biology