Curriculum Vitae

John P. LaCava
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Education

* ***University of Edinburgh, Scotland***	***Ph.D. Molecular Genetics****, 2005*
* *University of California, Davis*	*B.S. Biotechnology, 2000*
* *Massachusetts Bay Community College, Wellesley*	*A.S. Biotechnology, 1998 (honors)*

Research Experience

* ***Visiting Assistant Professor, New York University School of Medicine****, Institute for Systems Genetics.* February 2016 – present

* ***Research Assistant Professor, The Rockefeller University****, Laboratory of Cellular and Structural Biology.* January 2016 – present

* *Senior Research Scientist, New York University School of Medicine, Institute for Systems Genetics.* October 2014 – February 2016, with Prof. Jef D. Boeke

* *Research Associate, The Rockefeller University, Laboratory of Cellular and Structural Biology.* October 2008 – January 2016 (Postdoctoral Associate 2008 – 2011; Head of Lab: Prof. Michael P. Rout)

* *EMBO Fellow, Postdoctoral Researcher, Centre for Genomic Regulation, Barcelona.* Supervisor: Dr. Josep Vilardell, PI. September 2006 – October 2008

* *Visiting Scientist, University of Amsterdam, Mass Spectrometry Group, Swammerdam Institute for Life Sciences.* Supervisor: Prof. Luitzen de Jong, co-PI. January 2006 – September 2006

* *Postdoctoral Research Fellow ARW1, University of Edinburgh, Wellcome Centre for Cell Biology.* Supervisor: Prof. David Tollervey, PI. November 2004 – December 2005

* *Research Assistant IV, University of California, Davis, Section of Molecular & Cellular Biology, Division of Biological Sciences*. Supervisor: Prof. Raymond Rodriguez, PI. October 1998 - September 2000

* *Research Internship, University of Edinburgh, Pre-clinical Veterinary Sciences.* Supervisor: Prof. Peter Brophy, PI. June 1998 – August 1998

* *Laboratory Technician, Paratek Pharmaceuticals, Inc., Boston, Massachusetts.* Supervisor: Dr. Mark Nelson, Senior Director of Chemistry. December 1997 - June 1998, August - September 1998

* *Laboratory Technician, MBCC Biotechnology Program, Wellesley, Massachusetts.* Supervisor: Dr. Bruce Jackson, Program Director. September 1997 - May 1998

Grants/Fellowships/Awards

* ***The National Institute of General Medical Science****, Research Program Grant (R01), Awarded December 2017.* Principal investigator – **$1,298,300** (direct costs) – **Active** through 2021.

* ***The National Cancer Institute****, Small Business Technology Transfer Program Grant (R41), Awarded August 2016.* Principal investigator – **$294,320** (incl. overhead)

* *The Danish Council for Independent Research, Technology and Production Science, Awarded November 2012.* Co-principal investigator – **2,849,674 DKK** (incl. overhead)

* *NCDIR fellowship, Awarded May 2012.*

* *The Lundbeck Foundation, Biomedical Research Grant, Awarded December 2008.* Co-principal investigator – **1,000,000 DKK**

* *EMBO Long Term Fellowship, Awarded December 2005.* Postdoctoral Fellowship

* *Wellcome Trust Prize Studentship, Awarded January 2001.* PhD Studentship

Commercial Research & Consulting

* ***Plexity LLC***, Moscow, RU, October 2017 – present (**Co-founder, CSO**)
Research reagents and kit products for protein science and interactome research.

* ***B13LOGY LLC***, New York, NY, November 2016 – present (**Co-founder, CEO**)
Software development and consulting in the biomedical interactomics research space.

* ***CDI Laboratories Inc.***, Mayaguez, PR. January 2016 – present (**R&D collaborator / Scientific Advisor**)

* ***QSonica Inc.***, Newtown, CT. July 2012 – present (**R&D collaborator**)

* *Knomics LLC*, Moscow, RU. February – August 2017 present (**Scientific Advisor**)

* *Orochem Technologies Inc*., Lombard, IL. January 2011 – January 2012. (**Consultant**)

Teaching Experience

** Group Leader, Laboratory of Protein Interactions - School of Molecular and Theoretical Biology, Barcelona* – August 2017. http://molbioschool.com/en/

** Group Leader, Laboratory of Protein Interactions - School of Molecular and Theoretical Biology, Barcelona* – August 2016. http://molbioschool.com/en/

** Project Leader, Biomolecular Interactions - The Nuclear Pore Complex, Summer School of Science (S3++), Croatia* – July 2010. http://s3-en.sci.hr

** Floor Leader, Structure and Function of Proteins, 3rd year undergraduate course, University of Edinburgh, Biological Teaching Organization.* Supervisor: Prof. Alastair Aitken, Course Organizer. October – December 2002, 2003, 2004 & 2005

* *Demonstrator, Molecular Cell Biology, 3rd year undergraduate course, University of Edinburgh, Biological Teaching Organization.* Supervisor: Dr. Paul McLaughlin, Course Organizer. April - May 2002, April - May 2003, February 2004

* *Tutor, Molecules and Cells, 1st year undergraduate course, University of Edinburgh, Biological Teaching Organization.* Supervisor: Prof. Paul Barlow, Course Organizer. April - May 2002, April - May 2003, February 2004

* *Demonstrator, Structure and Function of Proteins, 3rd year undergraduate course, University of Edinburgh, Biological Teaching Organization.* Supervisor: Prof. Alastair Aitken, Course Organizer. October – December 2001

Honors

* *Massachusetts Bay Community College Distinguished Alumni Award – May 2008.*

Invited Talks

* *Sylvester Comprehensive Cancer Center, University of Miami Health System.* October 2017

* *Mobile DNA in Mammalian Genomes, FASEB meeting, Big Sky, Montana.* June 2017

* *New York University School of Medicine, Department of Dermatology*. September 29, 2016

* *Blizard Institute, Queen Mary University of London*. Aug 24, 2016

* *Centro de Genómica e Investigación Oncológica: Pfizer / Universidad de Granada / Junta de Andalucía*. July 27, 2015

* *New York University Microbiology Group*. December 2, 2014

* *Post-Genome Methods of Analysis in Biology and Laboratory and Clinical Medicine, Kazan, Russia*. November 1, 2014

* *European Research Institute for the Biology of Ageing, University Medical Center Groningen.* October 24, 2014

* *Instituto Gulbenkian De Ciência*. December 12, 2013

* *European Research Institute for the Biology of Ageing, University Medical Center Groningen.* July 25, 2013

* *The University of Edinburgh, Wellcome Trust Centre for Cell Biology.* January 27, 2012

* *The Rockefeller University, Laboratory of Lymphocyte Biology*. October 3, 2011

* *Marquette University, Dept. of Biological Sciences*. June 1, 2005

Additional courses and Workshops

* *Genome Engineering 3.0 Workshop:* Broad Institute of MIT, Cambridge, MA. May 2015

* *MSc program for Bioinformatics at the University of Manchester, UK.* Completed all coursework without dissertation. Oct 2010

* *Mechanistic and Integrative Aspects of mRNA Synthesis Workshop:* Universidad de Andalucia and Instituto de Salud Carlos III. October 2007

* *Mass Spectrometry in Biomolecular Sciences:* University of Amsterdam, Graduate School BioCentrum. January 2006

* *Pichia Fermentation Techniques Workshop:* University of British Columbia, Biotechnology Laboratory. March 2003

Science Communication, Outreach, and Press

* *Research Features Magazine* – Raising antibodies against protein complexes, November 2017 – http://researchfeatures.com/2017/11/09/raising-antibodies-against-protein-complexes/

* *The New York City Department of Education* – Career Day Program (March 2017), STAR Early College School – www.starearlycollege.org

* *GE&NE Africa* – Biochemistry & Molecular Biology Expert (2015 – present), Université de Perpignan – www.geneafrica.org/en/

* *Cyborg Futures* – Program Participant (January – June, 2017): Re-Invent Yourself: Cyborg Futures Technology & Art Collaborations, New York City – www.cyborgfutures.com

* *Polytech.Science.Art* – Program Participant (April 19 – 21, 2016): The Polytechnic Museum, Moscow – https://polymus.ru/eng/

* ***ArtSci Nexus*** – **Scientific Director** (2016 – present; www.artsci-nexus.com)

(1) *9 Evenings Revisited - In Theory, as in Practice THINK TANK* – Co-organizer and Participant (April 11 – 15, 2016): Kunstkraftwerk Leipzig, Germany

* *Science / Art / Communication - A Three-Ring Circus of Scientific Advocacy* – Invited Lecture (October 10, 2014): South Texas Center for Emerging Infectious Diseases.

* *Happigenetics Science Extravaganza* – co-producer, performer (July 13, 2013): A live science communication theatre piece and variety show; performed at Erarta contemporary art museum, St. Petersburg, Russia – www.erarta.com/en/

* *Sounds of Science – Founder and project manager* (2010 – present): An experimental project in the public communication of science and technology through music (www.facebook.com/soundsofscience.net/); and a public repository of science and engineering sounds (www.sosdb.net).

(1) The Sounds of Science – ASBMB Today, November 2012
www.asbmb.org/asbmbtoday/asbmbtoday_article.aspx?id=18197

(2) Making Music in The Lab – Chemical and Engineering News, April, 2013
http://cen.acs.org/articles/91/i13/Preserving-Terra-Cotta-Soldiers-Making.html

(3) Grooving to the Sounds of Science – BioTechniques, July, 2014
www.biotechniques.com/news/Grooving-to-the-Sounds-of-Science/biotechniques-352523.html#.WHqp_Vfa6e1

Selected Publications

Molloy, K.R., M.S. Taylor, I. Altukhov, P. Mita, H. Jiang, E.M. Adney, A. Wudzinska, D. Ischenko, K.H. Burns, D. Fenyö, B.T. Chait, D. Alexeev, M.P. Rout, J.D. Boeke, and **J. LaCava**. Dissection of purified LINE-1 reveals distinct nuclear and cytoplasmic intermediates. ***In Review at eLife***. **Corresponding author**
BioRxiv version: https://www.biorxiv.org/content/early/2017/06/30/157818

Winczura, K., M. Schmid, C. Iasillo, K.R. Molloy, L.M. Harder, J.S. Andersen, **J. LaCava**, & T.H. Jensen. **In Press**. Characterizing ZC3H18, a multi-domain protein at the interface of RNA production and destruction decisions. **Cell Reports**.

Ma, Y., L. Silveri, **J. LaCava,** & S. Dokudovskaya. **2017**. Tumor suppressor NPRL2 induces ROS production and DNA damage response. **Scientific Reports**. 7**,** 15311

Santanach, A., E. Blanco, H. Jiang, K.R. Molloy, M. Sansó, **J. LaCava**, L. Morey, & L. Di Croce. **2017**. The Polycomb group protein CBX6 is an essential regulator of embryonic stem cell identity. **Nature Communications.** 8, 1235.

Domanski, M. & **J. LaCava. 2017**. RNA Degradation Assay Using RNA Exosome Complexes, Affinity-purified from HEK-293 Cells. **Bio Protocol** 7. **Corresponding author**

Domanski, M. & **J. LaCava**. **2017**. Affinity Purification of the RNA Degradation Complex, the Exosome, from HEK-293 Cells. **Bio Protocol** 7. **Corresponding author**

LaCava, J., H. Jiang, & M.P. Rout. **2016**. Protein complex affinity capture from cryomilled mammalian cells. **Journal of Visualized Experiments**. e54518. **Corresponding author**

Domanski, M., P. Upla, W.J. Rice, K.R. Molloy, N.E. Ketaren, D.L. Stokes, T.H. Jensen, M.P. Rout, & **J. LaCava**. **2016**. Purification and Analysis of Endogenous Human RNA Exosome Complexes. **RNA**. 22(9):1467-1475. ***Corresponding author***

Taylor, M.S., **J. LaCava**, L. Dai, P. Mita, K.H. Burns, M.P. Rout, & J.D. Boeke. Characterization of L1-RNPs. **2016**. In J.L. Garcia (Ed.), **Transposons and Retrotransposons: Methods and Protocols**. Springer. 1400:311–338.

LaCava, J., J. Fernandez-Martinez, Z. Hakhverdyan, & M.P. Rout. **2016**. Protein Complex Purification by Affinity Capture. In B. Andrews, C. Boone, T. Davis, & S. Fields (Eds.), **Budding Yeast: A Laboratory Manual**. Cold Spring Harbor Laboratory Press. 21:382-397.

Hakhverdyan, Z., M. Domanski, L. Hough, A.A. Oroskar, A.R. Oroskar, D.J. Dilworth, K.R. Molloy, V. Sherman, J.D. Aitchison, B.T. Chait, T.H. Jensen, M.P. Rout†, & **J. LaCava†. 2015**. Rapid, Optimized Interactomic Screening. **Nature Methods**. 12:553–560. †***Corresponding author***

LaCava, J.†, K. R. Molloy, M. S. Taylor, M. Domanski, B. T. Chait, & M. P. Rout†. **2015**. Affinity proteomics to study endogenous protein complexes: Pointers, pitfalls, preferences and perspectives. **BioTechniques**, 58(3):103–119. †***Corresponding author***

Dai, L., **J. LaCava**, M.S. Taylor, & J.D. Boeke. **2014**. Expression and detection of LINE-1 ORF-encoded proteins. **Mobile Genetic Elements**. 4:e29319.

Andersen, P.R., M. Domanski, M.S. Kristiansen, H. Storvall, E. Ntini, C. Verheggen, J. Bunkenborg, I. Poser, M. Hallais, R. Sandberg, A. Hyman, **J. LaCava**, M.P. Rout, J.S. Andersen, E. Bertrand, & T.H. Jensen. **2013**. The human cap-binding complex is functionally connected to the nuclear RNA exosome. **Nature Structural & Molecular Biology**. 20:1367-1376.

Taylor, M.S.†, **J. LaCava†**, P. Mita, K.R. Molloy, C.R.L. Huang, D. Li, E.M. Adney, H. Jiang, K.H. Burns, B.T. Chait, M.P. Rout, J.D. Boeke, & L. Dai†. **2013**. Affinity proteomics reveals human host factors implicated in discrete stages of LINE-1 retrotransposition. **Cell**. 155:1034-1048. †***Equal contribution***

LaCava, J., N. Chandramouli, H. Jiang, & M.P. Rout. **2013**. Improved native isolation of endogenous Protein A-tagged protein complexes. **BioTechniques**. 54:213–216.

Domanski, M., K. Molloy, H. Jiang, B.T. Chait, M.P. Rout, T.H. Jensen, & **J. LaCava**. **2012**. Improved methodology for the affinity isolation of human protein complexes expressed at near endogenous levels. **BioTechniques**. 0:1–6. ***Corresponding author***

Houseley, J., **J. LaCava**, & D. Tollervey. **2006**. RNA-quality control by the exosome. **Nature Reviews Molecular Cell Biology**. 7:529–539.
LaCava, J., J. Houseley, C. Saveanu, E. Petfalski, E. Thompson, A. Jacquier, & D. Tollervey. **2005**. RNA degradation by the exosome is promoted by a nuclear polyadenylation complex. **Cell**. 121:713–724.

Patents

Oroskar, AA, **LaCava, JP**, Rout, MP, Oroskar, AR. **2015**. Apparatus and Method for Parallel Collection and Analysis of the Proteome and Complex Compositions. **US Patent No. 9,084,994**.

Edited Books

The Eukaryotic Exosome. Methods in Molecular Biology Series (Springer). Eds. **LaCava, J** & Vaňáčová, Š. ***In Preparation***.