

Biographical Sketch: Robert Alan Arkowitz

Date and Place of Birth December 20, 1962; Princeton, New Jersey, U.S.A.

Professional Preparation

B.S., Biology, Chemistry, German. Magna Cum Laude & Distinctions in Biology. 1985.
 Duke University, Durham, North Carolina.
 Ph.D., Biochemistry. 1991.
 Brandeis University, Waltham Massachusetts. Graduate Advisor: Dr. R. H. Abeles.
 Postdoctoral Research, Cell Biology. 1991-1993.
 University of California, Los Angeles, California. Postdoctoral Advisor: Dr. W. T. Wickner.

Fellowships, Honors and Awards

2001-2010 Fondation pour la Recherche Médicale - BNP Paribas Award
 2002-2004 La Ligue Contre le Cancer - Equipe Labellisée.
 2001-2003 EMBO Young Investigator Distinction.
 2000-2003 CNRS ATIPE.
 1991-1993 Damon Runyon Walter Winchell Cancer Research Postdoctoral Fellowship.
 1989 Gillette Corp. Graduate Fellowship.
 1987-1988 National Research Service Traineeship.
 1986 G. Klein Fellowship.
 1985 NSF Graduate Fellowship Honorable Mention.
 1985 German Academic Exchange (D.A.A.D.) Fellowship

Appointments

2014-present CNRS UMR7277 / INSERM UMR1091 Institute of Biology Valrose - Univ. of Nice-Sophia Antipolis.
 Research Director (Full Professor), CNRS DR1-ATIPE
 2007-2014 CNRS UMR7277 / INSERM UMR1091 Institute of Biology Valrose - Univ. of Nice-Sophia Antipolis.
 Research Director (Full Professor), CNRS DR2-ATIPE
 2000-2007 CNRS Inst. of Developmental Biology & Cancer - Univ. of Nice-Sophia Antipolis.
 Group Leader (Associate Professor), CNRS CR1-ATIPE
 1999-2000 Division of Cell Biology Lab of Molecular Biology, MRC, Cambridge UK.
 Tenured Group Leader
 1994-1999 Division of Cell Biology Lab of Molecular Biology, MRC, Cambridge UK.
 Tenure track Group Leader
 1991-1993 University of California, Los Angeles, CA.
 Postdoctoral Fellow- Damon Runyon Walter Winchell Cancer Research Fellow
 1986-1991 Biochemistry Dept., Brandeis University, Waltham MA.
 Graduate Student - NIH training grant, G. Klein Fellow & Gillette Corp. Fellow
 1985-1986 D.A.A.D. (German Academic Exchange Service) Fellow (with Dr. K. Gersonde), Physiological Chemistry Dept.,
 R. W. Technische Hochschule, Aachen, DE.
 1985 Research technician (with Dr. K. McCarty Sr.), Biochemistry Dept., Duke University, NC.
 1984-1985 Research technician. Aquanautics Corp. - Duke University Marine Lab, NC.
 1982-1983 Research intern (with Dr. N. Marcus), Biology Dept., Woods Hole Oceanographic Institute, MA.
 1982-1984 Undergraduate honors research (with Dr.'s S. Wainwright & S. Rommel, Biology Dept. & with Dr. M. Brouwer,
 Biochemistry Dept., Duke University Marine Lab), Duke University, NC.

Publications – Recent and Significant

1. A. Ismael, W. Tian, N. Waszczak, X. Wang, Y. Cao, D. Suchkov, E. Bar, M. V. Metodiev, J. Liang, **R. A. Arkowitz** & D. E. Stone. G β promotes receptor polarization and chemotropism by inhibiting receptor phosphorylation. *Science Signaling*. 2016 in press.
2. V. Ghugtyal, R. Garcia-Rodas, A. Seminara, S. Schaub, M. Bassilana & **R. A. Arkowitz**. Phosphatidylinositol-4-phosphate-dependent membrane traffic is critical for fungal filamentous growth. *PNAS USA*. 2015, **112**: 8644-8649.
3. S. G. Martin & **R. A. Arkowitz**. Cell polarization in budding and fission yeasts. *FEMS Microbiol Rev*. 2014, **38**: 228-253.
4. B. Ramirez-Zavala, M. Weyler, T. Gildor, C. Schmauch, D. Kornitzer, **R. Arkowitz** & J. Morschhäuser. 2013. Activation of the Cph1-Dependent MAP Kinase Signaling Pathway Induces White-Opaque Switching in *Candida albicans*. *PLoS Pathog*. **9**:e1003696
5. V. Corvest, S. Bogliolo, P. Follette, **R. A. Arkowitz** & M. Bassilana. 2013. Spatiotemporal regulation of Rho1 and Cdc42 activity during *Candida albicans* filamentous growth. *Mol. Microbiol*. **89**: 626-648.
6. I. Guillas, A. Vernay, J. J. Vitagliano & **R. A. Arkowitz**. 2013. Phosphatidylinositol 4,5-bisphosphate is required for invasive growth in *Saccharomyces cerevisiae*. *J. Cell Sci*. **126**: 3602-3614.
7. R. DeFlorio, M.-E. Brett, N. Waszczak, E. Apollinari, M. V. Metodiev, O. Dubrovskiy, D. Eddington, **R. A. Arkowitz** & D. E. Stone. 2013. G β phosphorylation is crucial for efficient chemotropism in yeast. *J. Cell Sci*. **126**: 2997-3009.

8. A. Vernay, S. Schaub, I. Guillas, M. Bassilana & **R. A. Arkowitz**. 2012 .A steep phosphoinositide-bis-phosphate gradient forms during fungal filamentous growth. *J Cell Biol.* **198**:711-30.
9. **R. A. Arkowitz** & M. Bassilana. Polarized growth in fungi: symmetry breaking and hyphal formation. *Sem. Cell Dev. Biol.* 2011, **72**: 806-885.
10. H. Hope, C. Schmauch, **R. A. Arkowitz** & M. Bassilana. 2010. The *Candida albicans* ELMO1 homolog functions together with Rac1 and Dck1, upstream of the MAP Kinase Cek1, in invasive filamentous growth. *Mol. Microbiology* **76**: 1572 - 1590.
11. D.V. Suchkov, R. DeFlorio, E. Draper, A. Ismael, M. Sukumar, **R. A. Arkowitz**, & D. E. Stone. 2010. Polarization of the yeast pheromone receptor requires its internalization but not actin-dependent secretion. *Mol. Biol. Cell* **21**: 1737-1752.
12. **R. A. Arkowitz**. "Chemical Gradients and Chemotropism in Yeast.". 2009. In *Generation and Interpretation of Morpho-genetic Gradients* (J. Briscoe, P. Lawrence & J.-P. Vincent, Ed.s). CSH Perspectives in Biology. CSHL Press. **1** a001958. 1-20.
13. C. Mionnet, S. Bogliolo, & **R. A. Arkowitz**. 2008. Oligomerization Regulates the Localization of Cdc24, the Cdc42 Activator in *Saccharomyces cerevisiae*. *J. Biol. Chem.* **283**: 17515-17530.
14. H. Hope, S. Bogliolo, **R. A. Arkowitz** & M. Bassilana. 2008. Activation of Rac1 by the Guanine Nucleotide Exchange Factor Dck1 Is Required for Invasive Filamentous Growth in the Pathogen *Candida albicans*. *Mol. Biol. Cell* **19**: 3638-3651.
15. M. Bassilana, & R. A. Arkowitz. Rac1 and Cdc42 Have Different Roles in *Candida albicans* Development. *Eukaryotic Cell*, 2006, **5**, 321-329.
16. S. Barale, McCusker, D. & **R. A. Arkowitz**. 2006. Cdc42 GDP/GTP Cycling is Necessary for Efficient Cell Fusion during Yeast Mating. *Mol. Biol. Cell* **17**: 2824-2838.
17. A. Nern & **R. A. Arkowitz**. 2000. G-proteins Mediate Changes in Cell Shape by Stabilizing the Axis of Polarity. *Mol. Cell* **5**: 853-864.
18. A. Nern & **R. A. Arkowitz**. A GTP Exchange Factor Required for Cell Orientation, *Nature*, 1998, **391**: 195-198.

Activities

Teaching/Training

- President of **SIGNALIFE** LABEX PhD committee (>70 PhD fellows recruited 2013-2016) Organization of including recruitment, lab rotations, scientific/soft skill courses and methods courses. <http://signalife.unice.fr/>
- Co-organizer for the 2010 - 2013 EMBO Young Investigator PhD course. A week long course for PhD at the EMBL in Heidelberg, DE. Gave lectures/lead discussions on Cell Biology, Grant & Article Writing Skills and Scientific Presentation Skills. <http://www.embo.org/funding-awards/young-investigators/embo-young-investigator-phd-course>
- Co-Coordinator/Responsible for EU Marie Curie international Ph.D. program in Developmental and Cellular Decisions (InterDeC) (2005-2009). Responsible for all aspects of program organization including a range of skills courses (professional presentation), career coaching, a career seminar series.
- Taught M2 class in UE Parasitologie-Mycologie Médicale et Fondamentale, "Biologie moléculaire et cellulaire" of Science & Technology Masters program Université Pierre et Marie Curie master 2014.
- Taught PhD students in LabEX Signalife PhD course 2015.
- Hosted 20 Masters levels students and 10 undergraduates (license) for laboratory research projects.
- Trained 12 PhD students and 12 Postdoctoral fellows.

Coordination

- Co-Responsible for Plateforme Microscopie Imagerie Côte d'Azur-MICA, IBSA labeled 2010/12. <http://www.mica-bio.fr/>
- Co-organizer of 1st Symposium of Physics of living matter: experiments and theoretical models (2014). <http://phylivmat.weebly.com>
- Invited Co-chair/Growth and Polarity session organizer, Asian Pacific Organization for Cell Biology Congress & ASCB Workshop. Singapore (2014).
- Co-organizer Journée Imagerie Cellulaire CoReBio PACA (2014).
- Co-organizer of 2nd Bio-Phys-Math Meeting (2013).
- Co-organizer of MICA days Microscopy Symposium (2012).
- Physics of living matter, interdisciplinary axis University of Nice Sophia Antipolis Steering committee (2014-present). http://physbio.unice.fr/?page_id=234
- Co-organizer of 6th symposium on small G-proteins.
- Co-organizer of "Cytoskeleton and cell movement" mini-symposium.

Evaluation/Review/Editorial

- Institut Pasteur evaluation committee for the establishment of research units and junior groups (2015- present).
- Expert Evaluator European Commission Marie Skłodowska-Curie Innovative Training Networks" (H2020-MSCA-ITN-2016)
- Jury member for CNRS/UNSA "Chaire D'excellence" Maître de Conférence selection. (2010)

- Editor board Scientific Reports (<http://www.nature.com/srep/>)
- Editor board PlosONE (<http://www.plosone.org/>)
- Editorial board Eukaryotic Cell (<http://ec.asm.org/site/misc/edboard.xhtml> 2014-2016)
- Guest Editor for Seminars in Cell and Developmental Biology issue
- Referee for journals: Curr Biol; Dev Cell; Cell Rep; EMBO J; J Cell Biol; Biomed Central Cell Biol; Cell Microbiol; Traffic; Mol Biol Cell; PlosOne; Plos Pathogen; Plos Biol; Plos Genet; Appl Env Microbiol; Eukaryot Cell; Mol Microbiol; Mol Sys Biol; Nat Rev Microbiol; BBRC; Curr Genet; J Clin Microbiol; Science; PNAS; Fungal Genet Biol & FEBS Lett.
- Referee for grants: ACI; ANR; National Science Foundation (NSF), Austrian FWF; EMBO Short and Long Term Fellowships; Conseil Regional d'Aquitaine, Ecole Doctoral Régional Bretagne, Spanish Consolider; Boehringer Ingelheim Fonds Fellowship, Medical Research Council UK, US-Israel Binational Research Foundation.
- Evaluation for tenure candidates (Albert Einstein College of Medicine, University of California, Irvine & University of Aberdeen, Institut Pasteur).
- Rapporteur for 17 Theses and HDRs.

Coordination/Participation international projects

- 2015- 2019 EU Marie Curie Innovative Training Network H2020-MSCA-ITN-2014. “Principles of Polarity – Integrating genetic, biophysical & computational approaches to understand cell and tissue polarity” (PolarNet). Academic & industrial partners (15). Partner of Multi-site program (<http://polarnet-itn.eu>).
- 2013-2017 EU Marie Curie Initial Training Network FP7-PEOPLE-2013-ITN “Sensing & integration of signals governing cell polarity & tropism in fungi” (Fungibrain). Academic & industrial partners (12). Partner of Multi-site program (<http://www.inflammation-repair.manchester.ac.uk/FungiBrain>).
- 2014 - 2018 U.S.A. National Science Foundation. “Empirical & mathematical approaches to study gradient sensing using yeast as a model.” Co-PIs with D.E. Stone & J. Liang, Univ. Illinois, Chicago (UIC) U.S.A.
- 2013-2015 CNRS PICS collaborative grant UIC U.S.A. “Heterotrimeric G protein regulation of chemotropism in yeast.” Coordinator.
- 2012-2013 France-Berkeley Fund - Collaborative Grant with J. Thorner UC Berkeley. “Requirements, Molecular Roles and Distribution of Membrane Phosphoinositides in External Signal-induced Polarized Growth.” Coordinator.
- 2010-2014 U.S.A. National Science Foundation. “Heterotrimeric G protein regulation of chemotropism in yeast.” Co-PI with D.E. Stone, Univ. of Illinois, Chicago U.S.A.
- 2010 Eiffel excellence scholarship, doctoral programme for Reagan DeFlorio who will spent 9 months in the lab 2010/11.
- 2009 EMBO short term fellowship for Reagan DeFlorio for 3 months research stay summer of 2009.
- 2007-2010 Coordinator of ERA-NET Pathogenomics project transnational project (Univ. Würzburg & Technion - Israel Institute of Technology).
- 2005-2009 EU Marie Curie Early Stage Training Network FP6-2002-Mobility 2 “International PhD Program in Developmental and Cellular Decisions” (InterDeC). Coordinator mono-site program.
- 2004-2006 CNRS PICS collaborative grant Univ. Santa Cruz U.S.A. “Regulation of cell growth by G-proteins.” Coordinator.
- 2001 France-Berkeley Fund - Collaborative Grant with D. Kellogg UC Santa Cruz. “Regulation of cell growth by G-proteins.” Coordinator.
- 1998-2000 EU Eurofan II (European Network for the Functional Analysis of Yeast Genes) Cell Architecture Node.

Dissemination

Peer reviewed publications: 51

Nature; Mol Cell; J Cell Biol; EMBO J; EMBO Rep; J Am Chem Soc; J Biol Chem; J Cell Sci; FEMS Microbiol Rev; PNAS; Fung Biol Rev; Euk Cell; FEBS Let; Blut; Biochem; Curr Biol; Mol Biol Cell; Mol Micro; Plos Pathogen; Plant Cell; Sci Signaling; Biochem Soc Tran; Cold Spring Harb Perspect Biol; Semin Cell Dev Biol; Trends Cell Biol; Arch Biochem Biophys; Biochim Biophys Acta; Mar Mammal Sci

Meeting presentations: > 75

Invited seminars: 90

Current Funding

2015- 2019 EU Marie Curie Innovative Training Network H2020-MSCA-ITN-2014.

2015-2016 ARC Projet.

2013-2017 ANR Blanc project.

2013-2017 EU Marie Curie Initial Training Network FP7-PEOPLE-2013-ITN.

2012-2020 LabEX SIGNALIFE