

## Candidate: Global Secretary (2022-2025) – ISCT Board of Directors



**Patricia Rocco, MD, PhD**

Full Professor

Federal University of Rio de Janeiro  
Brazil

### **Summary of academic and professional background:**

Prof. Rocco earned her medical degree from Federal University of Rio de Janeiro (UFRJ) in 1987 and completed her PhD (1995) at Carlos Chagas Filho Institute of Biophysics in UFRJ. In 1992, she joined the UFRJ as an Assistant Professor, becoming Full Professor in 2010. She is also the Head of Laboratory of Pulmonary Investigation, and runs a team of 56 people, including post-doc fellows, postgraduate and undergraduate students, as well as technicians. She has developed a network of researchers from the United States, Italy, Germany, and Canada, and is a Visiting Professor at the University of Genoa. Prof. Rocco is a pioneering Brazilian respiratory researcher, recognized for her important discoveries on new therapeutic strategies for respiratory diseases. She is an author of more than 380 peer-reviewed publications, one book and 120 book chapters. She is an active member of Scientific Societies in Brazil and abroad. Among her most outstanding contribution was her work with stem cells, especially during her stint as Head of the Stem Cell Therapy and Bioengineering Program of UFRJ (2018-2021). She was vice-president of the Brazilian Association for Cell & Gene Therapy (2012-2016) and ISCT South & Central America Region (2019-2021). She helped establish a successful stem cell program in Brazil coordinating clinical trials in lung diseases. She was elected Member of the National Academy of Medicine in Brazil (2012) and Brazilian Academy of Science (2016). She is currently a researcher of the National Council for Scientific and Technological Development (CNPq) at the highest level (1A).

### **Affiliated professional and commercial associations and any perceived or potential conflict of interests:**

Prof. Rocco has no commercial associations or potential conflicts of interests. She plays no current role with leadership/fiduciary responsibility with any professional society or association. She is currently affiliated with the following societies:

- International Society of Cell & Gene Therapy [ISCT South & Central America Regional Vice-President (2019-2021) and active member]
- Brazilian Association for Cell & Gene Therapy [Vice-president (2012-2016) and active member]
- American Thoracic Society (active member)
- European Respiratory Society (active member)
- Brazilian Society of Pneumology [Scientific president (2014-2016), active member, and is representing the Brazilian Society of Pneumology in the American Thoracic Society to discuss Stem Cell Tourism]
- Brazilian Society of Physiology [Member of the Postgraduate Committee (2006-2017), Regional (2011-2017) and National (2017-2010) Representative, Head of the Council (2015-2021), Vice-President (2019-2020), and President (2021-2022)]
- American Society of Physiology (active member)
- European Society of Intensive Care Medicine [Associate Editor of Intensive Care Medicine (2011-2013) and active member]

**List of top notable contributions to the field (e.g. publications, patents, reports, products advanced to clinical trial or regulatory approval, asset development, mergers, acquisitions, etc.) from the last 10 years:**

Publications in the last 10 years with impact factor higher than 5; \*shared senior authorship

1. D.A.F. Caldeira, D.J. Weiss, P.R.M. Rocco, P.L. Silva, F.F. Cruz. Mitochondria in Focus: From Function to Therapeutic Strategies in Chronic Lung Diseases. *Frontiers in Immunology*. 2021. Impact factor: 7.561.
2. K.N. Silva, P.C.G. Pinheiro, A.L.N. Gobatto, R. Passos, B. Paredes, L.S.A. França, C.K.V. Nonaka, B.B. Duarte, M. Araújo-Pereira, R. Tiburcio, F. Lima, G.L.S. Martins, B.B. Andrade, H.C. Castro-Faria-Neto, P.R.M. Rocco, \* B.S.F. Souza\*. Immunomodulatory and anti-fibrotic effects following the infusion of umbilical cord mesenchymal stromal cells in a critically ill COVID-19 patient presenting lung fibrosis: a case report. *Frontiers in Medicine*, 2021 Nov 17;8:767291. Impact factor: 5.091.
3. C. Santos, H. Amatullah, C. Vaswani, T. Maron-Gutierrez, M. Kim, S. Mei, K. Szaszi, A.P. Teixeira, A. Varkouhi, R. Herrero, J. Lorente, J. Tsoporis, S. Gupta, A. Ektesabi, N. Kavantzias, V. Salpeas, J. Marshall, P.R.M. Rocco, P. Marsden, D.J. Weiss, D. Stewart, P. Hu, C. Liles. Mesenchymal stromal (stem) cell (MSC) therapy modulates mir-193b-5p expression to attenuate sepsis-induced acute lung injury. *European Respiratory Journal*. Jun 10;2004216, 2021. Impact factor: 12.339.
4. M.A. Antunes, C.L. Braga, T.B. Oliveira, J.Z. Kitoko, L.L. Castro, D.G. Xisto, M.S. Coelho, N.N. Rocha, E.G. Martins, A. Galina, D.J. Weiss, J.R.L. Silva, M. Lopes-Pacheco, F.F. Cruz, P.R.M. Rocco. Mesenchymal stromal cells from emphysematous donors and their extracellular vesicles are unable to reverse cardiorespiratory dysfunction in experimental severe emphysema. *Frontiers in Cell and Developmental Biology*. 9: 661385. 2021 Impact factor: 6.684.
5. L.R.P. Carvalho, S.C. Abreu, L.L. Castro, L.H.A. Silva, P. Mattos-Silva, J.B. Vieira, R.T. Santos, M.R. Cabral, M. Khoury, D.J. Weiss, M. Lopes-Pacheco, P.L. Silva, F.F. Cruz, P.R.M. Rocco. Mitochondria-rich fraction isolated from mesenchymal stromal cells reduces lung and distal organ injury in experimental sepsis. *Critical Care Medicine*. 49(9): e880-e890, 2021. Impact factor: 7.598.

6. K.N. Silva, A.L. Nunes Gobatto, Z.S.M. Costa-Ferro, B.R.R. Cavalcante, A.C.I. Caria, L.S.A. França, C.K.V. Nonaka, F.M. Lima, M. Lopes-Pacheco, P.R.M. Rocco\*, B.S.F. Souza\*. Is there a place for mesenchymal stromal cell-based therapies in the therapeutic armamentarium against COVID-19? *Stem Cell Research and Therapy* 12(1): 425, 2021. Impact factor: 5.985.
7. S.R. Enes, T.H. Hampton, J. Barua, D.H. McKenna, C.C. Santos, E. Amiel, A. Ashare, K.D. Liu, A.D. Krasnodembskaya, K. English, B.A. Stanton, P.R.M. Rocco, M.A. Matthay, D.J. Weiss. Healthy versus inflamed lung environments differentially effect MSCs. *European Respiratory Journal*. 2004149, 2021. Impact factor: 12.339.
8. S.C. Abreu, M. Lopes-Pacheco, D.J. Weiss, P.R.M. Rocco. Mesenchymal stromal cell-derived extracellular vesicles in lung diseases: current status and perspectives. *Frontiers in Cell and Developmental Biology*. 9:600711. 2021. Impact factor: 6.684.
9. T. Maron-Gutierrez, P.R.M. Rocco. Cell-free therapies: novel approaches for COVID-19. *Frontiers in Immunology*. 11: 583017, 2020. Impact factor: 7.561.
10. M.N. Lima, H.A. Oliveira, P.M. Fagundes, V. Estado, A.Y.O. Silva, R.J.R.X. Freitas, B.A.R. Passos, K.S. Oliveira, C.N. Batista, A.L. Vallochi, P.R.M. Rocco, H.C. Castro-Faria-Neto, T. Maron-Gutierrez. Mesenchymal stromal cells protect against vascular damage and depression-like behavior in mice surviving cerebral malaria. *Stem Cell Research and Therapy*. 11 (1): 367. 2020. Impact factor: 5.985.
11. L.H.A. Silva, M.C. Silva, J.B. Vieira, E.C.D. Lima, R.C. Silva, D.J. Weiss, M.M. Morales, F.F. Cruz, P.R.M. Rocco. Magnetic targeting increases mesenchymal stromal cell retention in lungs and enhances beneficial effects on pulmonary damage in experimental silicosis. *Stem Cells Translational Medicine*. 9(10):1244-1256, 2020. Impact factor: 6.94.
12. S. Horie, B. McNicholas, E. Rezoagli, T. Pham, G. Curley, D. McAuley, C. O' Kane, A. Nichol, C. Santos, P.R.M. Rocco, G. Bellani, J.G. Laffey. Emerging pharmacological therapies for ARDS: COVID-19 and beyond. *Intensive Care Medicine*. 46 (12): 2265-2283, 2020. Impact factor: 17.679.
13. M. Cancio, R. Ciccocioppo, P.R.M. Rocco, B. Levine, V. Bronte, C.M. Bollard, D. Weiss, J. Boelens, P.J. Hanley. Emerging Trends in COVID-19 Treatment: Learning from Inflammatory Conditions Associated with Cellular Therapies. *Cytotherapy*. 22(9): 474–481, 2020. Impact factor: 5.414.
14. F.S. Aguiar, A.S. Melo, A.M.S. Araújo, A.P. Cardoso, S.A.L. Souza, M. Lopes-Pacheco, F.F. Cruz, D.G. Xisto, K.D. Asensi, L. Faccioli, A.B.S. Salgado, M.C.P.P. Landesmann, R.C.S. Goldenberg, B. Gutfilen, M.M. Morales, P.R.M. Rocco, J.R.L. Silva. Autologous bone marrow-derived mononuclear cell therapy in three patients with severe asthma. *Stem Cell Research and Therapy*. 11(1): 167, 2020. Impact factor: 5.985.
15. A.L. Silva, G.P. Oliveira, N. Kim, F.F. Cruz, J.Z. Kitoko, N.G. Blanco, S.V. Martini, J. Hanes, P.R.M. Rocco, J.S. Suk, M.M. Morales. Nanoparticle-based thymulin gene therapy therapeutically reverses key pathology of experimental allergic asthma. *Science Advances*. 6 (24): eaay7973, 2020. Impact factor: 14.136.
16. M. Khoury, J. Cuenca, F.F. Cruz, F.E. Figueroa, P.R.M. Rocco, D.J. Weiss. Current Status of Cell-Based Therapies for Respiratory Virus Infections: Applicability to COVID-19. *European Respiratory Journal*. 55 (6): 2000858, 2020. Impact factor: 12.339.
17. A.Y.O. Silva, E.A. Amorim, M.C. Barbosa-Silva, M.N. Lima, H.A. Oliveira, M.G. Granja, K.S. Oliveira, P.M. Fagundes, R.L.S. Neris, R.M.P. Campos, C.A. Moraes, A.L. Vallochi, P.R.M. Rocco, F.A. Bozza, H.C. Castro-Faria-Neto, T. Maron-Gutierrez. Mesenchymal stromal cells protect the blood-brain barrier, reduce astrogliosis, and prevent cognitive and behavioral alterations in surviving septic mice. *Critical Care Medicine*. 48 (4): e290-e298, 2020. Impact factor: 7.598.
18. T.D. Ramos, J.D. Silva, A.M. Fonseca-Martins, J.E.S. Pratti, L. Firmino-Cruz, D. Maciel-Oliveira, J.S. Santos, J.I.N. Tenorio, A.F. Araujo, C.G. Freire-de-Lima, B.L. Diaz, F.F. Cruz, P.R.M. Rocco, H.L.M. Guedes. Combined therapy with adipose tissue-derived

mesenchymal stromal cells and meglumine antimoniate controls lesion development and parasite load in murine cutaneous leishmaniasis caused by *Leishmania amazonensis*. *Stem Cell Research and Therapy*. 11(1):374, 2020. Impact factor: 5.985.

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20. L.L. Castro, J.Z. Kitoko, D.G. Xisto, P.C. Olsen, H.L.M. Guedes, M.M. Morales, M. Lopes-Pacheco, F.F. Cruz, P.R.M. Rocco. Multiple doses of adipose tissue-derived mesenchymal stromal cells induce immunosuppression in experimental asthma. *Stem Cells Translational Medicine*. 9 (2): 250-260, 2020. Impact factor: 6.94.
21. M. Lopes-Pacheco, C. Robba, P.R.M. Rocco, P. Pelosi. Current understanding of the therapeutic benefits of mesenchymal stem cells in acute respiratory distress syndrome. *Cell Biology and Toxicology*. 36 (1): 83-102, 2020. Impact factor: 6.691.
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24. J.D. Silva, M. Lopes-Pacheco, L.L. Castro, J.Z. Kitoko, S.A. Trivelin, N.R. Amorim, V.L. Capelozzi, M.M. Morales, B. Gutfilen, S.A.L. Souza, D.J. Weiss, B.L. Diaz, P.R.M. Rocco. Eicosapentaenoic acid potentiates the therapeutic effects of adipose tissue-derived mesenchymal stromal cells on lung and distal organ injury in experimental sepsis. *Stem Cell Research and Therapy*. 10 (1): 264, 2019. Impact factor: 5.985.
25. S.C. Abreu, D.G. Xisto, T.B. Oliveira, N.G. Blanco, L.L. de Castro, J.Z. Kitoko, P.C. Olsen, M. Lopes-Pacheco, M.M. Morales, D.J. Weiss, P.R.M. Rocco. Serum from asthmatic mice potentiates the therapeutic effects of mesenchymal stromal cells in experimental allergic asthma. *Stem Cells Translational Medicine*. 8 (3): 301-312, 2019. Impact factor: 6.94.
26. H.A. Poggio, M.A. Antunes, N.N. Rocha, J.Z. Kitoko, M.M. Morales, P.C. Olsen, M. Lopes-Pacheco, F.F. Cruz, P.R.M. Rocco. Impact of one versus two doses of mesenchymal stromal cells on lung and cardiovascular repair in experimental emphysema. *Stem Cell Research and Therapy*. 9(1):296, 2018. Impact factor: 5.985.
27. L.H.A. Silva, S.M. Silva, E.C.D. Lima, R.C. Silva, D.J. Weiss, M.M. Morales, F.F. Cruz, P.R.M. Rocco. Effects of static magnetic fields on natural or magnetized mesenchymal stromal cells: Repercussions for magnetic targeting. *Nanomedicine: Nanotechnology, Biology, and Medicine* 14(7): 2075-2085, 2018. Impact factor: 6.458.
28. S.C. Abreu, M. Lopes-Pacheco, A.L. Silva, D.G. Xisto, T.B. Oliveira, J.Z. Kitoko, L.L. de Castro, N.R. Amorim, V. Martins, C.F. Gonçalves-de-Albuquerque, H.C. Castro-Faria-Neto, P.C. Olsen, D.J. Weiss, M.M. Morales, B.L. Diaz, P.R.M. Rocco. Eicosapentaenoic acid enhances the effects of mesenchymal stromal cell therapy in experimental allergic asthma. *Frontiers in Immunology*. 9:1147, 2018. Impact factor: 7.561.
29. F.F. Cruz, P.R.M. Rocco, D.J. Weiss. hMSCs as an alternative therapeutic option for asthma with neutrophil mediated inflammation. *Experimental and Molecular Medicine*. 50 (6): 1-2, 2018. Impact factor: 8.718.
30. J.Z. Kitoko, L.L. de Castro, A. Nascimento, S.C. Abreu, F.F. Cruz, A. Arantes, D.G. Xisto, M. Martins, M.M. Morales, P.R.M. Rocco, P.C. Olsen. Therapeutic administration of bone

marrow-derived mesenchymal stromal cells reduces airway inflammation without upregulating Tregs in experimental asthma. *Clinical and Experimental Allergy* 48 (2): 205-216, 2018. Impact factor: 5.018.

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32. J.D. Silva, M. Lopes-Pacheco, A.H.R. Paz, F.F. Cruz, E. Bandeira, M.V. Oliveira, D.G. Xisto, V.L. Capelozzi, M.M. Morales, P. Pelosi, E. Cirne-Lima, P.R.M. Rocco. Mesenchymal stem cells from bone marrow, adipose tissue, and lung tissue differentially mitigate lung and distal organ damage in experimental acute respiratory distress syndrome. *Critical Care Medicine*. 46 (2): e132-e140, 2018. Impact factor: 7.598.
33. F.M. Ornellas, D.S. Ornellas, S.V. Martini, R.C. Castiglione, G.M. Ventura, P.R.M. Rocco, B. Gutfilen, S.A. de Souza, C.M. Takiya, M.M. Morales. Bone Marrow-Derived Mononuclear Cell Therapy Accelerates Renal Ischemia-Reperfusion Injury Recovery by Modulating Inflammatory, Antioxidant and Apoptotic Related Molecules. *Cellular Physiology and Biochemistry*. 41 (5): 1736-1752, 2017. Impact factor: 5.141.
34. L.H.A. Silva, F.F. Cruz, M.M. Morales, D.J. Weiss, P.R.M. Rocco. Magnetic targeting as a strategy to enhance therapeutic effects of mesenchymal stromal cells. *Stem Cell Research and Therapy*. 8 (1): 58, 2017. Impact factor: 5.985.
35. H.G.P. de Oliveira, F.F. Cruz, M.A. Antunes, A.V. de Macedo Neto, G.A. Oliveira, F.M. Svartman, T. Borgonovo, C.L. Rebelatto, D.J. Weiss, P.R. Brofman, M.M. Morales, J.R. Lapa e Silva, P.R.M. Rocco. Combined Bone Marrow-Derived Mesenchymal Stromal Cell Therapy and One-Way Endobronchial Valve Placement in Patients with Pulmonary Emphysema: A Phase I Clinical Trial. *Stem Cells Translational Medicine*. 6 (3): 962-969, 2017. Impact factor: 6.94.
36. S.C. Abreu, M.A. Antunes, D.G. Xisto, F.F. Cruz, V.C. Branco, E. Bandeira, J.Z. Kitoko, A.F. de Araújo, L. Dellatorre-Teixeira, P.C. Olsen, D.J. Weiss, B.L. Diaz, M.M. Morales, P.R.M. Rocco. Bone Marrow, Adipose, and Lung Tissue-Derived Murine Mesenchymal Stromal Cells Release Different Mediators and Differentially Affect Airway and Lung Parenchyma in Experimental Asthma. *Stem Cells Translational Medicine*. 6 (6): 1557-1567, 2017. Impact factor: 6.94.
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38. J.P. Carvalho, T.D. Ramos, J.D. Silva, J.E. Pratti, A.M. da Fonseca-Martins, J.Z. Kitoko, D.C. Gomes, S.P. Chaves, B.L. Diaz, P.R.M. Rocco, H.L.M. Guedes. Effects of bone marrow mesenchymal stromal cell therapy in experimental cutaneous leishmaniasis in BALB/c mice induced by *Leishmania amazonensis*. *Frontiers in Immunology*. 8: 893, 2017. Impact factor: 7.561.
39. L. Mendonça, N.S. Felix, N.G. Blanco, J.S. da Silva, T.P. Ferreira, S.C. Abreu, F.F. Cruz, N.N. Rocha, P.M. Silva, V. Martins, V.L. Capelozzi, G. Zapata-Sudo, P.R.M. Rocco, P.L. Silva. Mesenchymal stromal cell therapy reduces lung inflammation and vascular remodeling and improves hemodynamics in experimental pulmonary arterial hypertension. *Stem Cell Research and Therapy*. 8(1): 220, 2017. Impact factor: 5.985.
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- Capsid Enhances Gene Lung Delivery and Does Not Alter Lung Morphofunction in Mice. *Cellular Physiology and Biochemistry*. 34(3): 681-690, 2014. Impact factor: 5.141.
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#### Book chapters

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### **Summary of involvement with ISCT in the past five years:**

Since 2017, Prof. Rocco has attended several ISCT annual and regional meetings where posters and oral presentations were presented. She gave talks in a symposium and plenary session during ISCT meetings in 2020 and 2021, respectively. In 2017, she was invited to participate in an ISCT-SCA regional meeting in Chile as a speaker. In the same year, Prof. Rocco organized a symposium with Brazilian Association for Cell & Gene Therapy (ABTCel-Gen) in Brazil to which speakers from ISCT-SCA were invited. Prof. Rocco also organized the 10th Congress of ABTCel-Gen with ISCT. Several speakers and attendees from ISCT were present. From 2019 until 2021, Prof. Rocco acted as ISCT-SCA Regional Vice-President. In this role, Prof. Rocco participated in the organization of the 2019 meeting on Stem Cells and Regenerative Medicine together with the Mexican Society for Stem Cell Research and gave some talks. In 2021, she participated in the organization of a meeting with ABTCel-Gen and ISCT-SCA in Brazil. In the last two years, several webinars, symposiums, and “Town Halls” were organized, discussing the role of stem cell therapy in different diseases and COVID-19, as well as regulation of stem cell therapy in South and Central America.

### **Committee participation**

- ISCT-SCA Regional Executive Committee (2017-to date), Operating Plan (2020), and Americas Regions Collaboration (2021)
- ISCT Global Government and Public Relations Committee (2017-2018)
- ISCT Nomination Committee (2018, 2021)
- ISCT Membership Recruitment and Retention Working Group (2020)
- ISCT 2021 Organizing Committee Meeting (2020-2021)
- ABTCel-Gen and ISCT-SCA Organizing Committee Meeting (2020-2021)



## **Summary of strategic vision for the Global Society:**

Prof. Rocco firmly believes that regenerative medicine is a new approach for medical therapy, in which one attempts to repair, regenerate, or remodel organs and tissues using bioengineering principles. Prof. Rocco has worked intensively in regenerative medicine in Central and South America. As a Regional VP-Elected, Prof. Rocco has organized and articulated a network of academic and industrial competences to develop therapeutic strategies in regenerative medicine aiming to reduce morbidity and mortality in different diseases. She has worked in close association with the regulatory agencies in different countries of Central and South America on the rules concerning the use of stem cells and biomaterials. Moreover, Prof. Rocco promoted interaction with various scientific groups with diverse backgrounds, bringing together expertise in stem cell biology and bioengineering with a multidisciplinary approach in basic, pre-clinical and clinical science. In the last two years, she has improved the interaction between graduate students and post-doctoral fellows as well as technicians in regenerative medicine, regardless of the restrictions brought by the pandemic.

As a global secretary, Prof. Rocco will encourage new worldwide membership applications and organization of meetings with special focus on young researchers, who are the future of the society. In addition, Prof. Rocco will strengthen the relationship between academia and industry by organizing practical courses in which young researchers from different parts of the world will have the opportunity to learn new techniques. In collaboration with the President of ISCT, she will organize the strategic planning, annual meetings, as well as awards and honors. In this context, she will take the opportunity to suggest special awards for young researchers. Last, but certainly not least, she will encourage the development of educational programs for graduate and undergraduate students on the basis of stem cell principles, by creating videos and lectures. She is concerned about the growing problem of medical tourism and the miraculous promises of unscrupulous professionals.