

ACADEMIC CURRICULUM VITAE

Jeronimo Aguiar Bezerra

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www.ciara.fiu.edu

www.amlight.net

www.ampath.net

EDUCATION & TRAINING

- 2012 M.S. Mechatronics
Federal University of Bahia
Master Thesis Title: *Mobilidade IP com o Protocolo LISP: Avaliação Prática* (IP Mobility with LISP: A Practical Evaluation)
Graduate Advisor: Prof. Dr. Luciano Porto Barreto
- 2009 B.S. Computer Science
Federal University of Bahia
Final Work Title: *Estudo sobre Segurança de Camada de Enlace em Redes de Campus* (A Survey about Layer 2 Security in Campus Networks)
Advisor: Prof. Dr. José Augusto Suruagy

APPOINTMENTS

- 2016-present IT Assistant Director: Center for Internet Augmented Research and Assessment (CIARA)
School: Florida International University
Location: 11200 S.W. 8th St PC 312, Miami, FL 33199
Description:
- Lead the AmLight and AMPATH Academic Exchange Point's Engineering Teams, composed by four sr. network engineers, two software developers and networking interns
 - Responsible for planning, configuring, operating and for the prospection of new technologies and protocols to support AmLight's operation, including BGP, IPv6, OpenFlow, Multicast, PIM and OSPF.
 - Lead Engineer responsible for the activation of the first international 100G link from USA to South America
 - Lead of the SDN deployment in production in 2014 and its current operation, supporting 2000+ institutions with NOX, ONOS and Ryu
 - Lead Software Engineer for new OpenFlow tools to support AmLight's operation, such as the AmLight OpenFlow Sniffer, the AmLight SDNTrace or integration components – most in Python and available at Github
 - Lead Engineer of the Large Survey Synoptic Telescope Network Engineering Team responsible to plan, test and operate the multi-100G network responsible to transfer all data generated from Base/Chile to Archive/USA

- Responsible for outreaching AmLight's capabilities to the international community, establishing new partnerships, writing papers and presenting experiences and softwares developed in more than 10 countries, including at NANOG

2014-2016

Coordinator Computer System Control: Center for Internet Augmented Research and Assessment (CIARA)

School: Florida International University

Location: 11200 S.W. 8th St PC 312, Miami, FL 33199

Description:

- Responsible for planning, configuring, operating and for the propection of new technologies and protocols to support AmLight's operation, including BGP, IPv6, OpenFlow, Multicast, PIM and OSPF.
- Lead of the SDN deployment in production in 2014 and its current operation, supporting 2000+ institutions
- Lead Software Engineer for new OpenFlow tools to support AmLight's operation, such as the AmLight OpenFlow Sniffer, the AmLight SDNTrace or integration components – most in Python
- Responsible for outreaching AmLight's capabilities to the international community, establishing new partnerships, presenting experiences and softwares developed in more than 10 countries, including at NANOG
- Responsible for managing two interns and their SDN projects

2012-2014

Senior Network Engineer: Brazilian National Network of Research

Location: 209, Andre Tosello Ave, Campinas, SP, Brazil

Description:

- AmLight's Sr. Network Engineer, responsible for all network engineering to connect all Latin America National Research Networks to USA's NRENs and Internet commodity.
- Responsible for BGP peerings at Nap of the Americas and Amsterdam Internet Exchange Point
- Responsible for BGP, IPv4, IPv6, Layer 2 and switch fabric cluster operations.
- Provide support to all academic applications through AMLIGHT's backbone, to experiments as OpenFlow/SDN, Network Monitoring using PerfSonar and Hybrid Networks.

2011-2012

Information Technology Manager:

School: Federal University of Bahia, Brazil

Location: 1, Adhemar de Barros Ave, CPD, Salvador, Bahia, Brazil

Description:

- Lead of a team of 33 technicians and network analysts, which involved all datacenter operations and maintenance (150 servers and 70 TB of data).
- Supporting the UFBA's network, composed of 12,000 desktops, 100Km of optical fiber, 400+ D-Link, 3Com and Cisco devices, based on OSPF.

- Supporting the Internet eXchange Point of Bahia (IXP-BA - <http://ba.ptt.br>), which had 19 autonomous systems exchanging 2 Gbps of IP traffic.
- Responsibility for the operation of the Federal Research Network's Point of Presence in Bahia (PoP-BA/RNP) - that connects all universities and research centers of Bahia, Brazil-, based in one 10Gbps backbone, connect to the Brazilian Academic Network over three 10 Gbps connections.
- Supporting Salvador's Metro Network Operation, which has 16 participants, connected to it with 1 or 10Gbps links (<http://remessa.pop-ba.rnp.br>).

2011-2012

Network Researcher

School: Federal University of Bahia, Brazil

Location: 1, Adhemar de Barros Ave, CPD, Salvador, Bahia, Brazil

Description:

- Working on research related to IP Mobility in the Internet of the future project, which is focused on LISP Protocol
- Co-Advisor of four final works at the UFBA, related to network and security and author of one paper "Introducing LISP as a solution to the Internet scalability issue"

2003-2011

Network and IT Analyst

School: Federal University of Bahia, Brazil

Location: 1, Adhemar de Barros Ave, CPD, Salvador, Bahia, Brazil

Description:

- Supporting the operation of the Federal Research Network's Point of Presence in Bahia (PoP-BA/RNP)
- Supporting all projects and implementations related to networking in the UFBA and PoP-BA/RNP, as deployments of BGP, OSPF, QinQ, EAPS, Multicast, IPv6 and security, using Cisco, Extreme and Juniper devices
- Network administration of the IXP of Bahia, related to Project PTTMetro-Brazil (<http://www.ptt.br>)
- Deployment of the Salvador's Metro Ethernet network with Extreme Network devices and 100km of optical fibers
- Supporting all 50 GNU/Linux Debian servers of UFBA, from mainframe/zVM s390 to Intel amd64
- Supporting the consolidation of Intel and S/390 servers using VMWare 3.5 and IBM SAN (DS-4000 storages).

TEACHING EXPERIENCE

2016

Invited Professor: Software-Defined Networking

School: Florida International University, Computer Science School

Location: 11200 S.W. 8th St PC 312, Miami, FL 33199

Total: 3 hours

2007 Assistant Professor: Introduction to Voice over IP
School: Federal University da Bahia, Mathematics Institute
Location: Av. Ademar de Barros, S/N, Ondina, Salvador, Bahia, Brazil
Total: 36 hours

RESEARCH EXPERIENCE

2011-2012 Network Researcher at Federal University of Bahia, Brazil
Location: 1, Adhemar de Barros Ave, CPD, Salvador, Bahia, Brazil
Description:

- Working on research related to IP Mobility in the Internet of the future project, which is focused on LISP Protocol
- Co-Advisor of four Computer Science students and their final works at the Mathematics Institute of the Federal University of Bahia, related to network and security and author of one paper "Introducing LISP as a solution to the Internet scalability issue".

REVIEW EXPERIENCE

2016 Invited Panel Reviewer - National Science Foundation (NSF) for Cybersecurity Innovation for Cyberinfrastructure (CICI) Projects
Description: Evaluation of CICI funding proposals from USA Universities

2016 Invited Proposal Reviewer - National Science Foundation (NSF)
2016 Workshop for Research in Internet of Future
Description: Evaluation of grants proposals from USA Universities for presentations

BOOK AUTHOR

Book: OSPF Avançado (Advanced OSPF). 2015. ISBN: 978-85-63630-57-5

Link: <https://www.scribd.com/document/317716767/OSPF-Avancado>

SENIOR PERSONAL FOR NSF PROJECTS

2015-2021 Subaward under # AST- 1202910, \$17,158,000, **LSST Construction: Construction of the Large Synoptic Survey Telescope (LSST)**
FIU awarded for AMLIGHT to provide an Advanced International Network for the Large Synoptic Survey Telescope (LSST) through 2031 with AMLIGHT's long-term support for a high-speed network, linking LSST to the National Center for Super Computing Applications (NCSA) through a sub-award from the Association of Universities for Research in Astronomy (AURA).

- 2015-2020 Award# ACI- 1451018, \$5,000,000, IRNC: **Backbone: AmLight Express and Protect (ExP)**, AmLight ExP will be a reliable, leading-edge infrastructure for research and education. Total production bandwidth provided by AmLight ExP between the U.S. and South America will grow to more than 680G over the next five years.
- 2015-2020 Award# ACI- 1451024, \$3,500,000, IRNC: **RXP: AtlanticWave-Software Defined Exchange: A Distributed Intercontinental Experimental Software Defined Exchange (SDX)** A distributed experimental SDX will provide an environment for development and prototyping of functions and services essential towards advancing knowledge to support end-to-end services, capable of spanning multiple SDN domains.

HONOR AWARDS AND ACHIEVEMENTS

- 2017 Nominated for 2017 Florida International University (FIU) Service and Recognition Awards
- 2016 Awarded the Best Experience Paper at the 2015 IFIP/IEEE International Symposium on Integrated Network Management with paper titled “Benefits brought by the use of OpenFlow/SDN on the AmLight intercontinental research and education network”
- 2016 Featured researcher in Digital Time “Innovation and excellence enable new partnerships and growth”, (“Inovação e excelência viabilizam novas parcerias e crescimento” -Tempo Digital 40 Anos de STI) Magazine April 2016, Salvador, Bahia, Brazil. Tempo Digital is an institutional dissemination journal of the Information Technology Superintendence (STI) of the Federal University of Bahia (UFBA), ISBN 2448-0061

PEER REVIEWED PUBLICATIONS

Google Scholar: <https://scholar.google.com/citations?user=GkzT4uAAAAAJ&hl=en>

- Bezerra, J.**, Ibarra, J., Schwarz, M., Freitas, H., Morgan, H., “Mitigating the Risks of Supporting Multiple Control Plans in a Production SDN Network: A Use Case”, In Anais do SBRC/WPEIF 2017, Belem, PA, Brazil, (pp. 34-37)
- Xu, C., Wu, X., Luo, Y., Tierney, B., **Bezerra, J.** “Pepple: Programmable network measurement for troubleshooting soft failures”. In IEEE Sarnoff Symposium, 2016 37th (pp. 136-141). IEEE. Newark, NJ, USA.
- Bezerra, J.**, Galiza, H., Ibarra, J., Schwarz, M. “AmLight’s OpenFlow Sniffer dissected: Troubleshooting production networks.” In Anais do WPEIF 2016 Workshop de Pesquisa Experimental da Internet do Futuro (p. 33), 2016, Salvador, BA, Brazil.
- Galiza, H., Schwarz, M., **Bezerra, J.**, & Ibarra, J. “Moving an IP network to SDN: a global use case deployment experience at AmLight.” In Anais do WPEIF 2016 Workshop de Pesquisa Experimental da Internet do Futuro (p. 15), Salvador, BA, Brazil.

- Hendriks, L., Schmidt, R. D. O., Sadre, R., **Bezerra, J.**, Pras, A. "Assessing the Quality of Flow Measurements from OpenFlow Devices". 2016 Network Traffic Measurement and Analysis Conference. Louvain La Neuve, Belgium.
- J. Chung, J. Cox, J. Ibarra, **J. Bezerra**, H. Morgan, R. Clark, and H. Owen. "AtlanticWave-SDX: An International SDX to Support Science Data Applications," in Software Defined Networking (SDN) for Scientific Networking Workshop, Nov. 2015, pp. 1-7
- Ibarra, J., **Bezerra, J.**, Morgan, H., Lopez, L., Cox, D., Stanton, M., Machado, I., Grizendi, E. "Benefits brought by the use of OpenFlow/SDN on the AmLight intercontinental research and education network". IFIP/IEEE International Symposium on Integrated Network Management (IM) (pp. 942-947). IEEE, 2015. Ottawa, ON, Canada.
- Bezerra, J.** "Mobilidade IP com o protocolo LISP: avaliação prática". Master Defense in Mechatronics, Engineering School/Federal University of Bahia, 2012
- Bezerra, J.**, Bouças, M. "Monitoramento de serviços Web distribuídos com Zabbix". VI Workshop de Tecnologia da Informação das Instituições Federais de Ensino Superior – Goiania, Brazil, 2012
- Barreto, C., **Bezerra, J.** "Relato sobre a experiência do CPD da UFBA na gestão do ambiente de EAD usando o Moodle". VI Workshop de Tecnologia da Informação das Instituições Federais de Ensino Superior – Goiania, Brazil, 2012
- Valcy, I., **Bezerra, J.** "TRAIRA: Tratamento de Incidentes de Rede Automatizado". V Workshop de Tecnologia da Informação das Instituições Federais de Ensino Superior – Florianopolis, Brazil, 2011
- Valcy, I., Barreto, L. P., **Bezerra, J.** "Tratamento Automatizado de Incidentes de Segurança da Informação em Redes de Campus". XI Simpósio Brasileiro em Segurança da Informação e de Sistemas Computacionais (SBSeg) - Brasília/Brasil, 2011
- Bezerra, J.**, Barreto, L., Mendonça, L., Alvez, C., Freitas, H. "LISP as a solution for Internet scalability". I Workshop Research of the Future Internet, Gramado/Brazil, 2010.
- Bezerra, J.** "Estudo sobre Segurança de Camada de Enlace em Redes de Campus". Under graduation final work, Institute of Mathematics, Federal University of Bahia, Brazil. Defended in June, 2009.
- Ramos, G., **Bezerra, J.**, Teixeira, J., Farias, R., & Salles, T. Data Warehouse e Data Mining, Institute of Mathematics, Federal University of Bahia/Brazil, 2009.
- Bezerra, J.** "Serviço de E-Mail Redundante da UFBA". I Workshop de Tecnologia da Informação das Instituições Federais de Ensino Superior - Salvador Brazil, 2007

STUDENT MENTORING

2017 Suri, Nalin; Degree seeking BS Florida International University

Alcocer, Pablo; Degree seeking BS Florida International University
NSF Research Experience for Undergrads (REU) supplement to IRNC Backbone:
AmLight ExP project with a concentration in Software Defined Networking.

2016 Lazarre, Jahkell; Degree seeking MS Florida International University
Lyons, Steven; Degree seeking Ph.D. Florida International University
FIU VIP Graduates Project: AmLight ExP project with a concentration in Software
Defined Networking.

2015 Cruz, Jose; Degree seeking BS Florida International University
Feldbeine, Zeev; Degree seeking BS Florida International University
NSF Research Experience for Undergrads (REU) supplement to IRNC Backbone:
AmLight ExP project with a concentration in Software Defined Networking.

2014 Marin, Marcelo; Degree seeking MS Florida International University
Mcnab, Dwayne; Degree seeking BS Florida International University
Network Interns: AmLight ExP project with a concentration in Software Defined
Networking.

STUDENT THESIS CO-ADVISING

2011 Thiago Lima Bomfim de Jesus; Graduate BS Computer Science at Federal University of
Bahia (UFBA)
Thesis: Automated activity detection and containment Malicious code in campus
networks: UFBA case (Detecção e contenção automatizada de atividade maliciosa em
redes de campus: caso UFBA)
Advisor: Prof. Dr. Luciano Porto Barreto

2010 Delson Antonio do Rosario Filho; Graduate BS Computer Science at Federal University
of Bahia (UFBA)
Thesis: Detection of equipment with NAT or DHCP using sFlow (Detecção de
equipamentos com NAT ou DHCP utilizando sFlow)
Advisor: Prof. Dr. Luciano Porto Barreto

2010 Italo Valcy da Silva Brito; Graduate BS Computer Science at Federal University of Bahia
(UFBA)
Thesis: TRAIRA: a tool for Automated Incident Handling (TRAIRA: uma ferramenta para
Tratamento de Incidentes de Rede Automatizado)
Advisor: Prof. Dr. Luciano Porto Barreto

2009 Humberto Silva Galiza de Freitas; Graduate BS Computer Science at Federal University
of Bahia (UFBA)
Thesis: The scalability of the Internet and a new perspective of routing with the LISP
protocol (A escalabilidade da Internet e uma nova perspectiva de roteamento com o
protocolo LISP)
Advisor: Prof. Dr. Luciano Porto Barreto

STUDENT THESIS EVALUATOR

- 2009 Eduardo Ramos dos Santos Júnior; Graduate BS Computer Science at Federal University of Bahia (UFBA)
Thesis: Performance Analysis of a Name Server Authoritative for ENUM applications with support for DNSSEC (Análise de Desempenho de um Servidor de Nomes Autoritativo para aplicações ENUM com suporte a DNSSEC)
Advisor: Prof. José Augusto Suruagy Monteiro
- 2009 Ricardo Jose de Sousa Farias Junior; Graduate BS Computer Science at Federal University of Bahia (UFBA)
Thesis: Curupira-IDS: An Intelligent Intrusion Detection System (Curupira-IDS: Um Sistema de Detecção de Intrusão Inteligente)
Advisor: Prof. Dr. Luciano Porto Barreto

PRESENTATIONS SESSIONS AT TECHNICAL AND SCIENTIFIC MEETINGS

- J. Bezerra, "Handling Network Events in a Production SDN Environment", TERENA Network Conference (TNC17) 2017, Linz, Austria, June 2017
- H. Morgan, J. Ibarra, J. Bezerra, H. Galiza, M. Schwarz, "Mitigating the Risks of Supporting Multiple Control Planes in a Production SDN Network: A Use Case", SBRC/WPEIF 2017, Belem, Brazil, May 2017
- M. Schwarz, J. Bezerra. "Inter-domain SDN Data Plane Validation: Next Steps at AmLight", Internet2 Global Summit 2017, Washington,DC, April 2017
- J. Bezerra, S. Donovan, R. Clarck, "Design and Demo of AtlanticWave/SDX", Super Computing Conference SC16, Salt Lake City, UT, Nov 2016
- J. Bezerra, S. Donovan, R. Clark, "Challenges When Designing A Distributed SDX", Meeting with Software Defined Exchange Working Groups, Princeton University, NJ, Oct 2016
- J. Ibarra, H. Morgan, D. Cox, J. Bezerra. "AmLight backbone transition to SDN: Celebrating the second anniversary", Global Lambda Interconnection Facility Workshop, Miami, FL, Sep 2016
- S. Donovan, R. Clark, J. Bezerra. " Challenges When Designing a Distributed SDX", Internet2 Technology Exchange, Miami, FL, Sep 2016
- J. Bezerra, M. Schwarz. "Troubleshooting AmLight: Handling Network Events in a Production SDN Environment", Internet2 Technology Exchange, Miami, FL, Sep 2016
- J. Ibarra, H. Morgan, D. Cox, J. Bezerra. "Creating New Opportunities for U.S.-Latin America R&E Collaborations", Internet2 Technology Exchange, Miami, FL, Sep 2016
- C. Griffin, J. Bezerra. "Interconnecting Spectrum Between Multiple Domains to Support Science Applications: A Use case", Internet2 Technology Exchange, Miami, FL, Sep 2016

- J. Bezerra. "Assessing the Quality of Flow Measurements from OpenFlow Devices", Internet2 Technology Exchange, Miami, FL, Sep 2016
- H. Galiza, M. Schwarz, J. Ibarra, J. Bezerra. "Deploying SDN experiments in Latin America: the ONOS and SDN-IP application use case at AmLight", TICAL2016, Buenos Aires, Argentina, Sep 2016
- H. Galiza, M. Schwarz, J. Ibarra, J. Bezerra. "Moving an IP network to SDN: A global use case deployment experience at AmLight", SBRC/WPEIF 2016, Salvador, Brazil, Jun 2016
- J. Ibarra, J. Bezerra, H. Galiza, M. Schwarz. "AmLight's OpenFlow Sniffer dissected: Troubleshooting production networks", SBRC/WPEIF 2016, Salvador, Brazil, Jun 2016
- J. Ibarra, H. Morgan, D. Cox, J. Bezerra. "International Research Network Connections", Internet2 Global Summit 2016, Chicago, IL, May 2016
- J. Ibarra, H. Morgan, D. Cox, J. Bezerra. "SDN Optimized Advanced Network Services for Experiments", Internet2 Global Summit 2016, Chicago, IL, May 2016
- J. Bezerra. "ONOS Lightning Talk: Migrating AmLight from Legacy to SDN: Challenges, Results and Next Steps", Open Networking Summit 2016, Santa Clara, CA, Mar 2016
- J. Bezerra. "AtlanticWave-SDX: An International SDX to Support Science Data Applications", Super Computing Conference SC15, Austin, TX, Nov 2015
- J. Bezerra. "SDN Testbeds @ AmLight: One Year Later", Second SwitchOn Workshop Sao Paulo, Brazil, Oct 2015
- J. Bezerra. "SDN tools at AmLight: an OpenFlow sniffer", Internet2 Technology Exchange, Oct 2015
- J. Bezerra, M. Schwarz. "Coexisting Production and Experimental Testbeds at AmLight: A Secure Approach", Internet2 Technology Exchange, Oct 2015
- J. Bezerra. "Running production and experimentation on at AmLight SDN", 15th Annual Global LambdaGrid Workshop, Sep 2015
- H. Galiza, J. Bezerra. "AmLight SDN: Updates since last year", CLARA Tech 2015, Viña Del Mar, Chile, Jul 2015
- J. Bezerra. "SDN @ AmLight: One year later", NITRD Workshop, Berkeley, CA, Jul 2016
- J. Ibarra, H. Morgan, J. Bezerra. "Use of SDN in the AmLight intercontinental research and education network", TERENA /TNC15 Porto, Portugal, June 2015
- J. Bezerra. "Benefits brought by the use of OpenFlow/SDN in the AmLight intercontinental research and education network", IFIP/IEEE IM2015 Ottawa, Canada, May 2015

- J. Bezerra. "AmLight SDN: Futuro da Colaboração Acadêmica Internacional", WRNP Sao Paulo, Brazil, May 2015
- J. Ibarra, J. Bezerra. "AmLight ExP & AtlanticWave-SDX", WPEIF2015 Sao Paulo, Brazil, May 2015
- J. Bezerra, H. Galiza. "Experiência da AmLight com SDN: Desafios, Resultados e Futuro", GTER39 Rio de Janeiro, Brazil, May 2015
- J. Bezerra. "Network Programmability at AmLight", FTW Internet2 Miami, FL, Apr 2015
- J. Bezerra. "Network Testbeds at AmLight: Eight Months Later", Internet2 Global Summit, Washington DC, Apr 2015
- J. Bezerra. "AmLight SDN Testbeds; The Future of Collaboration", APAN 2015 Japan, Mar 2015
- J. Bezerra. "Migrating AmLight from legacy to SDN: Challenges, Results and Next Steps", NANOG 63 San Antonio, TX, Feb 2015
- J. Bezerra. "SDN @ AmLight: How could it help your research?", SwitchOn Workshop Miami, FL, Jan 2015
- E. Boyd, L. Fowler, J. Breen, J. Bezerra, T. Lehman, X. Yang. "Network Virtualization on Internet2 (slides 28-32)", I2 2014 Technology Exchange, Nov 2014
- J. Bezerra. "Moving Towards SDN @ AmLight", GLIF New Zealand, Oct 2014
- J. Bezerra. "AmLight SDN: Uma plataforma aberta para experimentação de redes", PoP-BA/RNP V WTR Salvador, Brazil, Sep 2014
- J. Bezerra. "AMPATH & AmLight: Moving toward SDN", ANSP RSA 5 Sao Paulo, Brazil, May 2015

VIDEO PRESENTATIONS AND LECTURES

- J. Bezerra. "Coexisting Production and Experimental Testbeds: The AmLight experience after one year", FIU Computer Science, Miami, FL, October 2016
- J. Bezerra. "Coexisting Production and Experimental Testbeds: The AmLight experience after one year", TERENA/TNC16, Prague, Czech Republic, June 2016
- J. Bezerra. "ONOS Lightning Talk: Migrating AmLight from Legacy to SDN: Challenges, Results and Next Steps", Open Networking Summit 2016, Santa Clara, CA, Mar 2016
- J. Bezerra. "Experiência da AmLight com SDN: Desafios, Resultados e Futuro", GTER 39 Workshop, Rio de Janeiro, Brazil, May 2015
- E. Boyd, J. Bezerra, M. Schwarz. "Network Testbeds at AmLight: Eight Months Later", I2 Global Summit 2015 Washington, DC, Apr 2015

J. Bezerra. "Migrating AmLight from legacy to SDN: Challenges, Results and Next Steps",
NANOG 63 San Antonio, TX, Feb 2015

J. Bezerra. "Ponto de Troca de Tráfego Definido por Software na AmPath (Portuguese)", ANSP
RSA 5 Sao Paulo, Brazil, May 2014

REFERENCES

Dr. Julio E. Ibarra
Florida International University, FL
Phone: (305) 348-4105
Email: julio@fiu.edu

Dr. Donald A. Cox, III
Vanderbilt University Nashville, TN
Phone: (615) 329-8516
Email: chip.cox@vanderbilt.edu

Dr. Heidi L. Morgan
University of Southern California
Phone: (310) 448-9115
Email: hmorgan@isi.edu

Dr. Luiz F. Lopez
University of Sao Paulo
Phone: (305) 348-4105
Email: lopez@ansp.br