

Alfred Ayala

Aldrich 227

Division of Surgical Research/Shock-Trauma Research Laboratories

Department of Surgery

Brown University Health-Rhode Island Hospital / affiliate of the Warren Alpert School of
Medicine at Brown University

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[Brown Bio Web page:](#)

[Div. Surg. Res./Dept Surg. Web page:](#)

[‘Ayala Lab.’ Web page at RI Hospital/Brown Univ.:](#)

[LinkedIn web page:](#)

[ORCID web page:](#)

[Research.com:](#)

[ScholarGPS™:](#)

h-index: 95; Google Scholar *i*10-index: 294; Res. Inter. Score: 8,442

EDUCATION

B.S.	Bowling Green State University (Applied Microbiology)	1976
M.S.	Cleveland State University (Biology; <i>Thesis advisor</i> : Dr. Dale Weis)	1979
Ph.D.	Cleveland State University (Regulatory Biology; <i>Thesis advisors</i> : Drs. Dale Weis & F. Paul Doerder)	1985
A.M.	Brown University (<i>ad eundem</i> – honorary degree in Science & Training)	2014

POSTGRADUATE TRAINING

1985-88	Post-doctoral Fellow (NIH program), Dept. of Microbiology, Michigan State University, East Lansing, MI (<i>mentor</i> : Dr. Felipe Kierszenbaum)
1988-89	Research Associate, Dept. of Surgery, Michigan State University, East Lansing, MI (<i>mentor</i> : Dr. Irshad H. Chaudry)

POSTGRADUATE HONORS AND AWARDS

Society of Leukocyte Biology (SLB) – *Legacy Award*, 2024

Elected “*Fellow*”-*American Association for the Advancement of Science (AAAS)*, 2022

National Institutes of Health-National Institute of General Medical Sciences –
Maximizing Investigators' Research Award-Established Investigator (MIRA-EI)
(R35), 2016-present

SHOCK Society – *Distinguished Service Award (15th Annual)*, 2011

SHOCK Society – *Scientific Achievement Award (10th Annual)*, 2007

Joseph Susman Memorial Award (3rd Annual) given for most significant paper presented in surgical infection at 14th Annual meeting of the Surgical Infection Society (SIS), 1994.

M.S.U.-Special Foreign Travel Fund Awards for attendance of 2nd and 3rd International Congresses on Immune Consequences of Trauma, Shock and Sepsis held in Munich, Germany in 1991 and 1994.

MILITARY SERVICE

None

PROFESSIONAL LICENSES AND BOARD CERTIFICATION

None

ACADEMIC APPOINTMENTS

- Graduate Teaching Assistant (Biology), Dept. of Biology, Cleveland State University, Cleveland, OH. 1976-78
- Research Assistant (Biochemistry), Veterans Administration Hospital, Cleveland, OH (Dr. O.P. Malhotra). 1978-80
- Graduate Teaching Assistant (Biology), Dept. of Biology, Cleveland State University, Cleveland, OH. 1980-85
- Postdoctoral Fellow (NIH Program), Dept. of Microbiology, Michigan State University, East Lansing, MI (Dr. F. Kierszenbaum). 1985-88
- Research Associate, Dept. of Surgery, Michigan State University, East Lansing, MI (Dr. I.H. Chaudry). 1988-89
- Assistant Professor, Dept. of Surgery; Adjunct Appointment, Dept. of Microbiology, Michigan State University, East Lansing, MI. 1989-1992
- Associate Professor, Dept. of Surgery; Dept. of Microbiology, Michigan State University, East Lansing, MI. 1993-1995
- Associate Professor of Surgery (Research), Dept. of Surgery, Brown University School of Medicine/Rhode Island Hospital, Providence, RI. 1996-2000
- Professor of Surgery (Research), Dept. of Surgery, the Warren Alpert School of Medicine at Brown University & Brown University Health/Rhode Island Hospital, Providence, RI. 2000-**present**
Faculty Trainer for:
 - Graduate Pathobiology Program. 2000-**present**

- Dept. Molecular Biology, Cellular Biology & Biochemistry-Graduate Program (MCB-GP). 2018-**present**
- Therapeutic Science Graduate Program (TSGP) (previously known as: Dept. Molecular Physiology, Pharmacology & Biotechnology [Dept. dissolved]-Graduate Program [MPPB-GP]). 2015-**present**
- Adjunct Professor, Dept. of Cell & Molecular Biol., University of Rhode Island, Kingston, RI. 2001-**present**
- Senior Research Scientist, Brown University Health/Rhode Island Hospital, Providence, RI. 2000-**present**
- Director, Division of Surgical Research, Dept. of Surgery, Brown University Health-Rhode Island Hospital/the Warren Alpert School of Medicine at Brown University, Providence, RI. 2023-**present**

HOSPITAL APPOINTMENTS

- Research Scientist, Ctr. for Surgical Research/Dept. of Surgery, Rhode Island Hospital, Providence, RI. 1996-2000
- Senior Research Scientist, Div. Surgical Research/Dept. of Surgery, Rhode Island Hospital, Providence, RI. 2000-**present**

OTHER APPOINTMENTS

Editorial Board (year-papers reviewed)

Journal of Leukocyte Biology: *Editorial Board Member; 2013-2022*

Journal of Immunology: *Associate Editor; 2003-2007. (2006-4; 2007-4, 2008-6, 2009-4, 2010-4, 2012-2, 2013-2; 2014-2, 2021-1; 2022-1)*

International Journal of Clinical and Experimental Medicine (open access J.), *Assoc. Editor-in Chief: 2007-2015 (2008-1)*

SHOCK: *Molecular, Cellular, Systemic Pathobiological Aspects and Therapeutic Approaches; 1993-2019. (2006-8, 2007-8, 2008-8, 2009-14, 2010-13, 2011-12, 2012-10, 2013-13, 2014-20, 2015-19, 2016-12, 2017-17, 2018-19, 2019-8)*

Ad Hoc Reviewer (year-papers reviewed)

Apoptosis (2022)

Cell Reports Medicine (2022)

eBioMedicine (2022)

Frontiers in Oncology (2022)

Journal of Biological Regulators & Homeostatic Agents (2022)

Expert Opinion on Drug Metabolism (2021)

BMC Immunology (2021)

Nature Communications (2021)

Frontiers in Immunology (2018, 2020)

Oncotarget (2017)

Innate Immunity (2013, 2023)
Journal of Gene Medicine (2013)
Surgical Endoscopy (2012)
Trends in Immunology (2012)
Mediators of Inflammation (2011)
Critical Care Research & Practice (2011)
Proceedings of the National Academy of Sciences, U.S.A. (2011-2, 2012)
 ‘Ad hoc-Editor’ paper for consideration by Proc. Nat. Acad. Sci. USA (2008)
Journal of Pathology (2011, 2012)
New England Journal of Medicine (2011, 2012)
Laboratory Investigation (2010)
Blood (2010, 2011)
The Lancet (2010)
Wound Repair and Regeneration (2009)
British Journal of Pharmacology (2008)
PLoS One (2008, 2010, 2011-2, 2013)
Physiological Genomics (2007)
Mini Reviews in Medicinal Chemistry (2007)
Molecular Medicine (2007, 2008-2)
Current Medicine Chemistry (2007)
Nature Reviews-Immunology (2006)
Nature Biotechnology (2005, 2011)
Frontiers in Biosciences (2005)
Biochemica Biophysica ACTA-Mol. Basis Dis. (2004)
International Immunology (2004)
Journal of Endotoxin Research (2004)
Journal of the American Medical Association-JAMA (2004)
FASEB Journal (2002, 2003, 2008)
Critical Care (2002, 2006, 2008, 2009, 2010, 2011)
Life Sciences (2002)
Inflammation Research (2002, 2005, 2008)
Surgical Infections (2001-2, 2002-2, 2003, 2005, 2006, 2008, 2010)
Journal of Leukocyte Biology (2000-2, 2001-2, 2007, 2013, 2014)
Critical Care Medicine (2000-4, 2001-5, 2002-4, 2003-5, 2006-4, 2007-4, 2008-3, 2009-3)
Acta Anaesthesiologica Scandinavica (2000)
Gut (1999)
Infection and Immunity (1999, 2003, 2008)
Intensive Care Medicine (1999, 2000-3, 2005)
Surgery (1999, 2000-2)
News in Physiological Sciences (1998)
Nature Medicine (1998, 2011)
Journal of Clinical Investigation (1997, 1998-3, 2003)
American Journal of Physiology (1996, 1997, 2000-3, 2001-4, 2005-2, 2006-2, 2007, 2008,
 2009, 2011)
Journal of Infectious Disease (1997)
Journal of Surgical Research (1996, 1997-4, 1998-6, 1999, 2000-4, 2001-2)

American Journal of Pathology (1997, 2000, 2003, 2007, 2009, 2010, 2013-2)
Journal of Neuroimmunomodulation (1996)
American Journal of Respiratory and Critical Care Medicine (2002, 2007, 2008-3, 2009)
American Journal of Respiratory Cell and Molecular Biology (1996)
Journal of Applied Physiology (1996)
Journal of Laboratory and Clinical Medicine (1995)
American Journal of Surgery (1995, 2006)
American Journal of Pathology (2006, 2009)
Cytokine (1995-2, 1996, 2003, 2014)
Journal of Critical Care (1995)

Study Section Appointments (*Ad Hoc review & Standing committee member*):

Chan Zuckerberg Initiative (Cycle 2) - Review panel member for Letters of Intent (1st step/invitation to submit) for “Science Diversity Leadership Awards”, January 17, 2025.

***National Institute of Health** – Center for Scientific Review - Maximizing Investigator Research Award- Panel D (2024/06 MRAD-Panel D) study section – Washington, D.C., June 27-28, 2024.

Shriners Hospitals Research Advisory Board - Review panel member for grants on Burns, Trauma, and Critical Care: March-July 2024.

***National Institute of Health** – Center for Scientific Review - Bioengineering, Surgery, Anesthesiology, and Trauma (BSAT)-member conflicts (2024/05 ZRG1 ISB-D [02]) study section – Virtual, March 13, 2024.

***National Institute of Health** – Center for Scientific Review - Innate Immunity and Inflammatory Responses (IIDA)-member conflicts (10 ZRG1 IIDA-F [02] M) study section – Virtual, June 9, 2023.

Shriners Hospitals Research Advisory Board - Review panel member for grants on Burns, Trauma, and Critical Care: March-July 2023.

***National Institute of Health** – Center for Scientific Review - Special Emphasis Panel/Scientific Review Group, 2023/05 ZRG1 ISB-D (02) M study section – Virtual, March 15, 2023.

***National Institute of Health** – Center for Scientific Review - Innate Immunity and Inflammatory Responses (IIDA) (ZRG1-IIDA-M-90) study section – Virtual, November 2, 2022.

***National Institute of Health** – Center for Scientific Review - Fellowships: Infectious Diseases and Immunology (ZRG1 F07C-M [20] L) SEP study section – Virtual, July 13-14, 2022.

Chan Zuckerberg Initiative (Cycle 1)/ National Academies of Science, Engineering & Medicine - Review panel member for applications for “Science Diversity Leadership Awards”, June 22, 2022.

Shriners Hospitals Research Advisory Board - Review panel member for grants on Burns, Trauma, and Critical Care: May-July 2022.

***National Institute of Health** – Center for Scientific Review - Applied Immunology and Disease Control (AIDC) (SBIR program) study section – Virtual, March 9, 2022.

Shriners Hospitals Research Advisory Board - Review panel member for grants on Burns, Trauma, and Critical Care: June 2021.

***National Institute of Health** – Center for Scientific Review - Maximizing Investigators' Research Award (MIRA-ESI) for Early-Stage Investigators (R35) study section – Virtual, March 18-19, 2021.

Shriners Hospitals Research Advisory Board - Review panel member for grants on Burns, Trauma, and Critical Care: August 2020.

***National Institute of Health** – Center for Scientific Review - Maximizing Investigators' Research Award (MIRA-EI) for Established Investigators (R35) study section – Virtual, June 23-24, 2020.

***National Institute of Health** – Center for Scientific Review - Maximizing Investigators' Research Award (MIRA-ESI) for Early-Stage Investigators (R35) study section – Virtual, March 16-17, 2020.

***National Institute of Health** – Center for Scientific Review - Maximizing Investigators' Research Award (MIRA-EI) for Established Investigators (R35) study section – Bethesda, MD, November 19-20, 2019.

Shriners Hospitals Research Advisory Board - Review panel member for grants on Burns, Trauma, and Critical Care: August 2019.

Shriners Hospitals Research Advisory Board- Review panel member for fellowship applications on Burns, Trauma, and Critical Care: April 1, 2019.

***National Institute of Health** – Center for Scientific Review - Special Emphasis Panel (ZRG1 SBIB-N [52] RPAR PANEL): SBIB Clinical Pediatric and Fetal Applications – March 13, 2019.

Shriners Hospitals Research Advisory Board - Review panel member for grants on Burns, Trauma, and Critical Care: August 2018.

Shriners Hospitals Research Advisory Board- Review panel member for fellowship applications on Burns, Trauma, and Critical Care: April 9, 2018.

Shriners Hospitals Research Advisory Board - Review panel member for grants on Burns, Trauma, and Critical Care: August 2017.

Shriners Hospitals Research Advisory Board- Review panel member for fellowship applications on Burns, Trauma, and Critical Care: April 30, 2017.

Shriners Hospitals Research-Boston SHC Res. Site Visit - Review panel member for site visit: Boston, MA, December 8-10, 2016.

Shriners Hospitals Research-Galveston SHC Res. Site Visit - Review panel member for site visit: Galveston, TX, October 25-26, 2016.

Shriners Hospitals Research Advisory Board - Review panel member for grants on Burns, Trauma, and Critical Care: August 2016.

Shriners Hospitals Research Advisory Board- Review panel member for fellowship applications on Burns, Trauma, and Critical Care: April 30, 2016.

Grant Application reviewed for the United States-Israel **Bi-national Science Foundation**, April 12th, 2016.

Shriners Hospitals Research Advisory Board- Review panel member for fellowship applications on Burns, Trauma, and Critical Care: November 2, 2015.

Shriners Hospitals Research Advisory Board - Ad hoc review panel member for grants on Burns, Trauma, and Critical Care: August 5-6, 2015.

Fellowship grant application reviewed for the French Intensive Care Society (FICS), June 12, 2015

Shriners Hospitals Research Advisory Board - Ad hoc review panel member for grants on Burns, Trauma, and Critical Care: August 7-8, 2014.

***National Institute of Health** – Center for Scientific Review (NCSR-SEP) - Special Emphasis Panel (ZGM1 PPBC-C [TB]): Trauma and Burn Research Center reviews – Philadelphia, PA, July 9, 2014

Shriners Hospitals Research Advisory Board- Review panel member for fellowship applications on Burns, Trauma, and Critical Care: April 30, 2014.

German Federal Ministry of Education and Health Research- Ad hoc review for Programm zur Förderung klinischer Studien und systematischer Reviews, 1. Ausschreibungsrunde (Program for the support of clinical studies and systematic Reviews, 1 advertising round): September 6, 2013.

Shriners Hospitals Research Advisory Board - Ad hoc review panel member for grants on Burns, Trauma, and Critical Care: August 1-3, 2013.

Fellowship grant application reviewed for the **Wellcome Trust Foundation**, May 24, 2013

Shriners Hospitals Research Advisory Board - Ad hoc review panel member for Developmental Grants on Burns, Trauma, and Critical Care: June 15, 2013.

***National Institutes of Health** - National Center for Scientific Review (NCRS) - **Lung Cellular, Molecular and Immunobiology (LCMI): R01-review panel, July 1, 2013-June 30, 2019 (Standing member of review panel)**

START Grant Application (ad hoc) reviewed for **Austrian Science Fund (FWF)**, December 7, 2012

Small Research-Pilot Project Grant Application (ad hoc) reviewed for the **National Health Services-National Institute for Academic Anaesthesia**, London, United Kingdom, October 24, 2012.

Shriners Hospitals Research Advisory Board - Ad hoc review panel member for grants on Burns, Trauma, and Critical Care: August 2-4, 2012.

***National Institutes of Health** - National Center for Scientific Review (NCS). Lung Cellular, Molecular, and Immunobiology-Study Section (LCMI): R01-review panel, June 5-6, 2012 (Ad hoc review panel member)

Shriners Hospitals Research Advisory Board- Review panel member for fellowship applications on Burns, Trauma, and Critical Care: April 15, 2012.

German Ministry of Education and Research- Ad hoc review for clinical trial application on GM-CSF therapy and Shock/ Sepsis: August 19, 2011.

Shriners Hospitals Research Advisory Board - Ad hoc review panel member for grants on Burns, Trauma, and Critical Care: August 4-5, 2011.

Shriners Hospitals Research Advisory Board- Review panel member for fellowship applications on Burns, Trauma, and Critical Care: April 28, 2011.

***National Institute of Health** – Center for Scientific Review (NCSR-SEP-BRP) - Special Emphasis Panel (ZGM1 PPBC-0 TB): Research Centers in Trauma, Burn, and Per-operative Injury – August 18, 2010

Shriners Hospitals Research Advisory Board - Ad hoc review panel member for grants on Burns, Trauma, and Critical Care: August 5-6, 2010.

**National Institute of Health – Center for Scientific Review (NCSR-SEP-BRP) - Special Emphasis Panel (ZRG1 SBIB-V 55): Bioengineering Research Partnership Review Panel – June 22, 2010*

**National Institute of Health – Center for Scientific Review (NCSR-LRP) – Loan Repayment Program – May 24, 2010*

Presentation (Orals) Judge for Brown University-Graduate Students of Color Conference at Andrew Hall, Providence, RI - March 23, 2010

**National Institute of Health – Center for Scientific Review (NCSR-SEP) - Special Emphasis Panel (ZRG1 SBIB-E 02 M): Member Conflict: SAT and BTSS Study Sections reviews – March 4, 2010*

**National Institute of Health – National Heart, Lung, and Blood Institute, division of extramural research activities- Special Emphasis Panel (NHLBI-SEP): P50 Clinical Center reviewed – October 30, 2009*

Thomas F. & Kate Miller Jeffress Memorial Trust - Ad hoc review for grant application (#N09JP29): October 13, 2009.

Shriners Hospitals Research Advisory Board- Review panel member for grants on Burns, Trauma, and Critical Care: August 6-7, 2009.

**National Institutes of Health – National Institute of General Medical Sciences (NIGMS) Special Emphasis Panel (ZGM1 PPBC-5 TB): P50 Clinical Center reviewed March 30, 2009.*

Shriners Hospitals Research Advisory Board- Review panel member for fellowship applications on Burns, Trauma, and Critical Care: October 8, 2008.

**National Institute of Health – Center for Scientific Review (NCSR) Special Emphasis Panel (ZRG1 SBIB-E [02] M): R01-R21s reviewed for Surgery, Anesthesia and Trauma-Member Conflicts- October 7, 2008*

Shriners Hospitals Research Advisory Board- Ad hoc review panel member for grants on Burns, Trauma, and Critical Care: August 7-8, 2008.

External reviewer for the **Canada Research Chairs Program** (renewal Tier II Candidate), Ottawa, Ontario, Canada, July 25, 2008.

**National Institute of Health – Center for Scientific Review (NCSR) Special Emphasis Panel (ZRG1-SBIB-N02 M): R01-R21s reviewed for Surgery, Anesthesia and Trauma-Member Conflicts- October 2, 2007.*

Grant Application reviewed for the **Wellcome Trust Foundation**, April 7, 2006

Studentship application external reviewer for the **National Heart & Lung Institute-London College**, London, United Kingdom, April 1, 2006.

**National Institute of Health – General Medical Sciences (NIGMS), Special Emphasis Panel (ZGM1-PPBC-3-GL): Glue Grant on Inflammatory Response to Injury. March 27, 2006*

Internal Grant Application reviewed for the Lifespan-Rhode Island Hospital/Brown University-COBRE CCDR application process.

Grant Application reviewed for the Brown University-Salomon Award application Process.

Grant Application reviewed for the **Sheffield Hospitals Charitable Trust**, Sheffield Teaching Hospitals, Sheffield, United Kingdom.

**National Institutes of Health – Center for Scientific Review (NCSR) Special*

- Emphasis Panel (ZRG1-IMM-A 40 P): P01-Supplemental Funding Request July 25, 2005.*
- External Advisory Board member for NIH-Program Project entitled: "Alcohol and Burn Injury: Neuro-immuno-endocrine Interactions", Program Director: Elizabeth J. Kovacs, Loyola Univ. Med. Ctr., Inst. Burn, Trauma and Shock, Maywood, IL, December 13, 2004*
- Grant Application reviewed for the **Wellcome Trust Foundation**, November 12th, 2004*
- *National Institutes of Health - National Center for Scientific Review (NCRS)*
Surgery, Anesthesiology and Trauma Study Section (SAT): R01-review panel, July 1, 2003-June 30, 2007 (Standing member of review panel) *
- Grant Application reviewed for the **Israel Science Foundation**, April 17th, 2003*
- *National Institutes of Health - National Inst. of Gen. Med. Sci. (NIGMS)*
Surgery, Anesthesiology and Trauma Study Section (SAT): R01-review panel, February 19-20, 2003 (Ad hoc review panel member)
- *National Institutes of Health - National Inst. of Gen. Med. Sci. (NIGMS)*
Special Emphasis Panels (ZRG1-SSS-W [04] & ZRG1-SSS-W [03]): R01-reviews form SAT members-February 19, 2003.
- *National Institutes of Health - National Inst. of Allergy & Infectious Disease (NIAID)*
Special Emphasis Panel (SEP #ZAI1-GLM-I-M2): P01-reviews-teleconference on "The Biodefense & Emerging Infectious Diseases Research Opportunities.", December 13th, 2002.
- *National Institutes of Health - National Inst. of Allergy & (NIAID)*
Special Emphasis Panel (SEP #ZAI1-GLM-I-M1): P01-review-teleconference on "Innate Immunity in Vertebrates and Insects", December 12th, 2002
- *National Institutes of Health - National Center for Research Resources (NCRR)*
Special Emphasis Panel (R01): R01-review-teleconference on "Nitrosylation/ Apoptosis", July 27th, 2002
- Combat Casualty Care Panel - CDMRP-Peer Reviewed Medical Research Program for **Department of Defense-AIBS**, July 18-19, 2002*
- Grant Application reviewed for **Department of Defense-USAMRMC**, November 9, 2001*
- Grant Application reviewed for **Austrian Science Fund (FWF)**, September 25, 2001*
- *National Institutes of Health - National Center for Research Resources (NCRR)*
Reverse Site Visit Team: Review of University of Washington Program Project Grant Application: P01GM58270-01, entitled: Cell Death Pathways and Consequences. Washington, DC, March 26-27, 1998
- Veterans Administration/Defense of Department** Grant Application Review, Washington, D.C., January 22-23, 1998*
- *National Institutes of Health - National Center for Research Resources (NCRR)*
Reverse Site Visit Team: Review of University of Florida General Clinical Research Center Application: RR00082-36A1. Rockville, MD, July 31, 1997
- *National Institutes of Health - Study Section for RFA DK96-007: "Hemolytic Uremic Syndrome: Pathophysiology and Treatment". Baltimore, MD, June 1996*
- Grant application reviewed for **Medical Research Council of Canada**, May 1996.*

Advisor/Consultant (Public)

***National Institutes of Health – National Institute of General Medical Sciences (NIH-NIGMS): Consultant/Panel member for ‘National Advisory General Medical Sciences (NAGMS) Working Group on Sepsis’, October 2018-May 2019**

Advisor/Consultant (Corporate)

Leidos Inc., Frederick, MD: *Consultant* (unpaid) on studies assessing efficacy of novel PD-1 peptide immunomodulator in animal model of polymicrobial sepsis. February 2017-November 2019.

Merck Research Laboratories, Philadelphia, PA: *Consultant* for Sepsis-Scientific, Input & Engagement meeting. February 2015.

Amplimmune/Medimmune, Gaithersburg, MD: *Consultant* on efficacy of novel co-inhibitory molecule biology in sepsis. August 2013.

Medimmune/Astrazeneca, Gaithersburg, MD: *Consultant* on efficacy of novel co-inhibitory molecule biology in sepsis. March 2012.

ATox Pharmaceutical Corporation, Ness Zion, Israel, *Co-Investigator* on studies assessing efficacy of novel anti-apoptotic agent in animal models of polymicrobial sepsis. May 2011-2013.

IDUN Pharmaceutical Corporation, San Diego, CA: *Consultant* on studies assessing efficacy of novel anti-apoptotic agents in animal models of polymicrobial sepsis. April 2001-2002.

Lederle *Advisors Meeting* relating to studies on Zosyn (Piperacillin sodium/tazobactam sodium) held in Orlando, FL, Dec 3-5, 1993

HOSPITAL COMMITTEES

at Rhode Island Hospital/Brown University:

Department of Surgery/Brown University - Promotions & Appointments Committee member, 2000-present

Department of Surgery/Brown University - Selection Committee member for the Armand D. Versaci Research Scholar Award/Fellowship, 2000-present

Division of Surgical Research/Rhode Island Hospital - Executive Committee member, 2000-present

Chairman of Search committee for Inflammation Res. Scientist at Assist. -Assoc. level, Division of Surgical Research, Department of Surgery, Rhode Island Hospital/ Brown University School of Medicine. August, 2007-2012

Lifespan-Rhode Island Hospital - Initial Inquiry Committee into Allegations of Scientific Misconduct, April 2014

Member of Search Committee for Inflammation Res. Scientist at Assist. -Assoc. level, Division

of Surgical Research, Department of Surgery, Rhode Island Hospital/ Brown University School of Medicine. August 2014-2017.

UNIVERSITY COMMITTEES

at Brown University:

Brown University School of Medicine: Subcommittee member on Academic Infrastructure for Teaching and Research, 2000-2001.

Curriculum Committee member, Pathobiology Graduate Program, Division of Biology and Medicine, Brown University, 2000-2003.

Retreat Co-Chair & Committee member, *Pathobiology Graduate Program*, Division of Biology and Medicine, Brown University, 2005.

Retreat Chair & Committee member, *Pathobiology Graduate Program*, Division of Biology and Medicine, Brown University, 2006.

Department of Surgery/Brown University - Promotions Committee member, 2004-present

Steering Committee Member-NIH/Brown Short Term Training Grant for Minority Students, June 2006-present.

Admissions Committee Chair & Committee member, *Pathobiology Graduate Program*, Division of Biology and Medicine, Brown University, 2007-2008.

Spring 2010/2011 Graduate Pathobiology Program-Seminar Series organizing Committee, Co-Chair & Committee member, *Pathobiology Graduate Program*, Division of Biology and Medicine, Brown University, 2009-2011.

Member of Search Committee for Research Biologist at Assist. -Assoc. level, at Ocean State Research Institute at the Providence VA Medical Center/ Brown University School of Medicine. April 2021-present.

Admissions Committee Chair & Committee member, *Therapeutic Sciences Graduate Program*, Division of Biology and Medicine, Brown University, 2021-present.

at Michigan State University:

Advisory Committee, Department of Surgery, Michigan State University, 1993-95

Master's degree Committee, Department of Surgery, Michigan State University, 1993-95.

Research Committee, Department of Surgery, Michigan State University, 1990-95

Water System, Building Representative, Michigan State University, 1990-95

MEMBERSHIP IN SOCIETIES

American Association for the Advancement of Science (Member since 1980-*present*)

- **Elected “Fellow”-American Association for the Advancement of Science (AAAS), 2022**

American Society of Investigative Pathology (member since 2013-*present*)

American Association of Immunologists (member since 1987-*present*)

International Cytokine Society (member since 2001-*present*)

Michigan Society for Medical Research (member 1987-1995)

Society of Protozoology (member 1984-1999)

Shock Society (Member since 1990-*present*)

- Laboratory Animal Issue Committee-*Shock Society*, member 1995-1996, Chairman 1995.
- Program Committee member-for joint meeting of the Fourth International Shock Congress and 22nd Annual *Shock Society* Meeting in Philadelphia, PA, June 12-16th, 1999.
- Program Committee member - 23rd Annual *Shock Society* Meeting in Snowbird, UT, June 3-6th, 2000.
- **Scientific Program Committee Chairman (elected)** - 24th Annual *Shock Society* Meeting in Marco Island, FL, June 10-13th, 2001.
- *Shock Society*-Development Committee, 2001-2005
- *Shock Society*-Finance Committee- 2002-2006
- *Shock Society*-Nominations Committee- 2006-2009 (Chairman: 2006)
- *Shock Society*-Internet Committee- 2006-2008
- *Shock Society*-International Relations Committee- 2006-2009
- *Shock Society*-Mentorship Committee - 2007-2019
- *Shock Society*-Rules Committee- 2009-2012 (Chairman: 2009-2012)
- **Shock Society Treasurer (elected)** - June 2002-2004.
- **Shock Society President-elect** - June 2003-2004
- **Shock Society President** - June 2004-2005
- **Shock Society Council Member as Past-President** - June 2005-2008

Surgical Infection Society (member since 1991 to *present*)

- **Recorder/Program Chairman-executive council member**, June 2005-2007
- *Surgical Infection Society*, dissemination of literature, National Association for Biomedical Research (NABR), 1991-1995.
- Local Program Arrangements Chairman for 20th Annual Meeting of the *Surgical Infection Society* in Providence, RI, April 26-29th, 2000.

- *Surgical Infection Society*, appointed to Program Committee, 2002-2005; chairman, 2005-2007.
- *Surgical Infection Society*, appointed to By-Laws Committee, 2007-2010.

Society of Critical Care Medicine (member since 1992-*present*)

Society of Leukocyte Biology (member since 1997-*present*)

- Local Program Arrangements Committee Member - 34th Annual *Society of Leukocyte Biology* Meeting, Cambridge, MA, Oct. 5-8, 2000.
- **SLB-Council Member** – (Appointed to fill vacated position), April 2011-October 2013
- **SLB-Sci. Program Committee Co-Chair** – 46th Annual *Society of Leukocyte Biology* Meeting in Newport, RI, October 20-23, 2013.
- Website committee's liaison to SLB council, November 2011-October 2013
- **Selected for SLB – Legacy Award**, October, 2024

PUBLICATIONS

1. Weis, D.S., and **Ayala, A.** 1979. Effect of exposure period and algal concentration on the frequency of infection of aposymbiotic ciliates by symbiotic algae from *Paramecium bursaria*. *J. Protozool.* 26:245-248.
2. **Ayala, A.**, and D.S. Weis. 1987. The effect of protein synthesis inhibitors on the infection of algal-free *Paramecium bursaria* by symbiotic Chlorellae. *J. Protozool.* 34:377-381.
3. **Ayala, A.**, and F. Kierszenbaum. 1987. The effects of p-chloromercuri-phenylsulfonic acid on *Trypanosoma cruzi* infection of mammalian host cells *in vitro*. *Mol. Biochem. Parasitol.* 23:63-69.
4. Connelly, M.C., **Ayala, A.** and F. Kierszenbaum. 1988. Effects of alpha and beta-adrenergic agonists on *Trypanosoma cruzi* interaction with host cells. *J. Parasitol.* 74:379-389.
5. Stephan, R.N., **Ayala, A.**, Harkema, J.M., Dean, R.M., Border, J.R. and I.H. Chaudry. 1989. Mechanism of immunosuppression following hemorrhage: Defective antigen presentation by macrophages. *J. Surg. Res.* 46:553-556.
6. **Ayala, A.**, Perrin, M.M. and I.H. Chaudry. 1989. Increased susceptibility to sepsis following hemorrhage: defective kupffer cell mediated antigen presentation. *Surg. Forum* 40:102-104.

7. **Ayala, A.**, Perrin, M.M., Wagner, M.A. and I.H. Chaudry. 1990. Enhanced susceptibility to sepsis following simple hemorrhage: depression of Fc and C3b receptor-mediated phagocytosis. *Arch. Surg.* 125:70-75.
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357. Monaghan, S.F., Cygan, K.J., Lomas-Neira, J., Chung, C-S., Daithi, D.S., Cioffi, W.G., Harrington, E.O., Fairbrother, W.G., **Ayala, A.** 2018. The RNA spliceosome in critical illness: U1-70K as a potential therapeutic target. *Shock* 49:33 (Suppl. 1).
358. Fallon, E.A., Cabral, D.J., Belenky, P., Chung, C-S., **Ayala, A.** 2018. Checkpoint proteins and the microbiome: changes in the peritoneal and terminal ileum microbiota in the presence/absence of programmed cell death receptor-1 (PD-1) in murine neonates. *J. Amer. Col. Surg.* 227: S79–S80.

359. Gray, C., Biron, B., Chen, Y., Chung, C-S., Ayala, A. 2018. CD4⁺ T cells upregulate immune checkpoint VISTA surface expression in response to septic challenge. *J. Leuko. Biol.* (On-line Abst. Suppl.: #22: pg 16-17).
360. Heffernan, D.S., Johnson, T., Chung, C-S, **Ayala, A.** 2019. Severity of critical illness induces CD3^{low} expression on invariant Natural Killer T-cells among surgical patients. *Acad. Surg. Cong. 2019 searchable on-line abstracts: (in press).*
361. Wakeley, M.E., Monaghan, S.F., Cioffi, W.G., **Ayala, A.**, Heffernan, D.S. 2019. Herpes Virus Entry Mediator (HVEM): A novel potential mediator of trauma induced immunosuppression. *Acad. Surg. Cong. 2019 searchable on-line abstracts: (in press).*
362. White, A., Wang, Z., Wang, X., Chambers, E., **Ayala, A.**, Rounds, S., Lu, Q. 2019. Cigarette smoke and pseudomonas aeruginosa synergistically cause ARDS via impairment of mitophagic flux and NLRP3 inflammasome activation. *FASEB J.* (Abst. epub suppl.) (in press).
363. Fredericks, A.M., Wang, E.J., Chung, C-S., Heffernan, D.S., Cioffi, W.G., Harrington, E.O., Fairbrother, W.G., **Ayala, A.**, Monaghan, S.F. 2019. Novel B and T cell recombination identification in a model of critical illness. *Shock* 51:101 (Suppl. 1).
364. Wang, E.J., Fredericks, A.M., Chung, C-S., Heffernan, D.S., Cioffi, W.G., Harrington, E.O., Fairbrother, W.G., **Ayala, A.**, Monaghan, S.F. 2019. unmapped viral rna sequencing reads in critical illness: a potential biomarker. *Shock* 51:120 (Suppl. 1).
365. Gray, C., Biron, B., Chung, C-S., Wakeley, M., Hu, B., Chen, Y., **Ayala, A.** 2019. Differential expression of immune checkpoint protein, VISTA, on T cell subsets in sepsis. *Shock* 51:125 (Suppl. 1).
366. Jiang, J., Hu, B., Chung, C-S., Chen, Y., Pan, W., Zhang, Y., **Ayala, A.** 2019. The effect of hemorrhage and subsequent septic challenge on activation/release of kidney SHP1/SHP2, NF-κB and HMGB1 during AKI. *Shock* 51:115 (Suppl. 1).
367. Hu, B., Jiang, J., Chung, C-S., Gray, C., Chen, Y., Pan, W., Zhang, Y., **Ayala, A.** 2019. Hemorrhage/sepsis-induced indirect (i)ARDS stimulation of VISTA expression on a variety of immune/non-immune cells. *Shock* 51:145 (Suppl. 1).
368. Wakeley, M.E., De Paepe, M.E., Chung, C-S., **Ayala, A.** 2019. Herpes virus entry mediator (HVEM) signaling in neonatal sepsis. *Shock* 51:13 (Suppl. 1).
369. Bartholomew, M., Chung, C-S., Chen, Y., **Ayala, A.** 2019. The contribution of SHP-1 signaling to sepsis-induced changes in macrophage function. *Shock* 51:127 (Suppl. 1).

370. Wakeley, M.E., De Paepe, M.E., Chung, C-S., **Ayala, A.** 2019. Programmed cell death ligand 1 (PDL-1) protects against death in neonatal sepsis. *J. Amer. Col. Surg.* 229:(in press).
371. Wakeley, M.E., Fallon, E.A., Reinhart, E., Cabral, D.J., Belenky, P., Chung, C-S., **Ayala, A.** 2019. Preserving neonatal survival and microbiome diversity in the face of lethal septic challenge through immune checkpoint regulator deletions. *Shock* 52:(in Press).
372. Wakeley, M.E., Gray, G.C., Heffernan, D.S., Chung, C-S., **Ayala, A.** 2019. The role of checkpoint regulators in trauma induced immunosuppression: T-lymphocyte co-expression of HVEM and BTLA and immunoparalysis. *J. Leuko. Biol.* (On-line Abst. Suppl.; #112: pg 103-104).
373. Gray, G.C., Chen, Y., Quiles-Ramirez, Y., **Ayala, A.** 2019. Immune checkpoint regulator, VISTA, improves survival in murine sepsis by enhancing T-cell crosstalk and minimizing inflammatory tissue injury. *J. Leuko. Biol.* (On-line Abst. Suppl.; #1: pg 2-4).
374. Jentzsch, M.S., Fredericks, A.M., Wang, E.J., Heffernan, D.S., **Ayala, A.**, Monaghan, S.F. 2020. RNA splicing entropy and acute respiratory distress syndrome in a mouse model. *Acad. Surg. Cong. 2020 searchable on-line abstracts.*
375. Wakeley, M.E., Armstead, B.E., Gray, C.C., Tindal, E.W., Heffernan, D.S., Chung, C-S., **Ayala, A.** 2020. Adaptive immune cell co-expression of HVEM and BTLA in immunosuppression of critical illness. *Acad. Surg. Cong. 2020 searchable on-line abstracts.*
376. Gray, C., Chen, Y., Chung, C-S., Ayala, A. 2020. Negative checkpoint protein, VISTA, suppresses the infiltration of proinflammatory gamma-delta T cells during murine sepsis progression. *Shock* 53(S1):133.
377. Wakeley, M.E., Chung, C-S., **Ayala, A.** 2020. Programmed cell death ligand 1 (PD-L1) protects against death in neonatal sepsis. *Shock* 53(S1):95.
378. Gray, C., Biron-Gerard, B., Chen, Y., Quiles-Ramirez, Y., **Ayala, A.** 2021. Negative checkpoint regulator, VISTA, plays an indispensable and non-redundant role in T_{reg}-mediated tissue protection and survival in murine sepsis. *J. Leuko. Biol.* (On-line Abst. Suppl.).
379. Armstead, B.E., Lee, S., Chen, Y., Zhao, R., Chung, C., Monaghan, S., **Ayala, A.** 2021. Resolving the impact of hypovolemic shock on gene expression by immune subsets. *Shock* (On-line Abst. Suppl.).

380. Gray, C., Biron-Gerard, B., Chen, Y., Quiles-Ramirez, Y., Chung, C-S., **Ayala, A.** 2021. Negative checkpoint regulator, VISTA, suppresses the infiltration of proinflammatory gamma-delta T cells during murine sepsis progression. *Shock* (On-line Abst. Suppl.).
381. Tindal, E.W., Chen, Y., Chung, C-S., **Ayala, A.** 2021. Selective knockout of PD-L1 on vascular endothelial cells improves survival in mice following trauma and sepsis. *Shock* (On-line Abst. Suppl.).
382. Hensler, E., Tamesis, D.D., Chen, Y., Chung, C-S., **Ayala, A.** 2021. Role of VISTA in neonatal sepsis. *Shock* (On-line Abst. Suppl.).
383. Jiang, W.Y., Lin, L.C., Bonilla, M., Fredericks, A.M., Cohen, M., Cioffi, W.G., Fairbrother, W.G., Nau, G.J., **Ayala, A.**, Levy, M.M., Monaghan, S.F. 2021. Deep RNA sequencing to identify antibiotic resistance genes in critically ill patients. *Shock* (On-line Abst. Suppl.).
384. Fredericks, A.M., Cohen, M., Cioffi, W.G., Fairbrother, W.G., Nau, G.J., **Ayala, A.**, Levy, M.M., Monaghan, S.F. 2021. RNA sequencing to identify antibodies in COVID-19 patients. *Shock* (On-line Abst. Suppl.).
385. Hensler, E., Tamesis, D.D., Chen, Y., Chung, C-S., **Ayala, A.** 2022. Loss of VISTA Alters Thymic Response to Neonatal Sepsis. *Acad. Surg. Cong. 2022 searchable on-line abstracts: (in press)*.
386. Gray, C., Biron-Girard, B., Chung, C-S., Chen, Y., **Ayala, A.** 2022. Promoting tolerance: a compelling role for vista in CD4⁺ Treg-mediated sepsis mortality. *Shock* (On-line Abst. Suppl.).
387. Armstead, B.E., Lee, C.S., Chen, Y., Zhao, R., Chung, C-S., Monaghan, S., **Ayala, A.** 2022. Experimental shock impacts lung associated inflammatory molecular targets as resolved by single cell RNA sequencing. *Shock* (On-line Abst. Suppl.).
388. Hensler, E., Tamesis, D.D., Chen, Y., Chung, C-S., **Ayala, A.** 2022. Tissue-specific responses to sepsis in VISTA ^{-/-} neonates. *Shock* (On-line Abst. Suppl.).
389. Monaghan, S.F., Fredericks, A.M., Cohen, M., Nau, G.J., Levy, M.M., **Ayala, A.** 2022. Odd RNA identified in blood of critically ill patients. *Shock* (On-line Abst. Suppl.).
390. Gray, C.C., Chung, C-S., Armstead, B.E., Chen, Y., **Ayala, A.** 2022. Striking a delicate balance: VISTA regulates the Treg and $\gamma\delta$ T cell population to promote sepsis survival. *J. Leuko. Biol.* (On-line Abst. Suppl.).
391. Armstead, B.E., Lee, C.S., Chen, Y., Zhao, R., Chung, C-S., Monaghan, S., **Ayala, A.** 2023. Use of single cell multiomics points to alterations in lung endothelial

- adrenomedullin receptor genes *Calcrl* and *Ramp2* following shock-induced priming. *Shock* 57:(in press).
392. Petros, H., Hensler, E., Jiang, J., Armstead, B., Gray, C., Chung, C-S., Chen, Y., **Ayala, A.** 2023. Investigating the role of V-domain Ig suppressor of T-cell activation (VISTA) in the morbidity and mortality of neonatal sepsis using a mouse model. *Shock* 57:(in press).
 393. Tindal, E.W., Chung, C-S., Chen, Y., **Ayala, A.** 2023. Effects of cell-lineage restricted PD-L1 gene expression on experimental murine shock/ sepsis induced lung injury. *Shock* 55:(in press).
 394. Shin, J., Fredericks, A.M., Raggi, E., **Ayala, A.**, Cohen, M., Fairbrother, W.G., Levy, M.M., Monaghan, S.F. 2024. Identifying novel noncoding genomic regions in sepsis using RNA sequencing data. *AAST 2024 abstract system (in press)*.
 395. Harwell, A., Raggi, E., Fredericks, A.M., Shin, J., Nau, G., Cohen, M., Levy, M.M., **Ayala, A.**, Sgouros, T., Monaghan, S.F. 2024. Characterizing the randomness of V(D)J recombination in B and T cell receptors in critically ill COVID-19 patients. *Shock (On-line Abst. System [in press])*.
 396. Shin, J., Fredericks, A.M., Raggi, E., **Ayala, A.**, Cohen, M., Fairbrother, W.G., Levy, M.M., Monaghan, S.F. 2024. Identifying novel genes and splicing events in sepsis using RNA sequencing data. *Shock (On-line Abst. System [in press])*.
 397. Ramirez Marrero, A., Gray-Lovell, C.C., **Ayala, A.** 2024. V-domain immunoglobulin suppressor of T cell activation (VISTA) regulates peritoneal neutrophil abundance in murine sepsis. *Shock (On-line Abst. System [in press])*.
 398. Gutierrez-Garcia, F., Armstead, B.E., Chen, Y., Ayala, A. 2024. VISTA: A Potential Target of Macrophage Reprogramming for the Treatment of Shock/Septic ARDS. *J. Leuko. Biol. (On-line Abst. Suppl.)*.
 399. Gray-Lovell, C.C., Puhlford, J.F., Murzin, E., Chen, Y., Lederer, J.A., **Ayala, A.** 2024. VISTA: A Potential Target of Macrophage Reprogramming for the Treatment of Shock/Septic ARDS. *J. Leuko. Biol. ("Late breaking", On-line Abst. Suppl.)*.
 400. Shin, J., Lillard, K.K., Fredericks, A.M., Raggi, E., **Ayala, A.**, Cohen, M., Fairbrother, W.G., Nau, G.J., Levy, M.M., Monaghan, S.F. 2025. Identifying Gene and Noncoding Genomic Region Pairs in Sepsis from RNA Sequencing Data. *Acad. Surg. Cong. 2025 searchable on-line abstracts: (in press)*.
 401. Lillard, K.K., Shin, J., Fredericks, A.M., Raggi, E., **Ayala, A.**, Cohen, M., Fairbrother, W.G., Levy, M.M., Nau, G.J., Monaghan, S.F. 2025. A Novel approach to identifying

pathogens causing sepsis utilizing peripheral blood RNA sequencing. *Acad. Surg. Cong. 2025 searchable on-line abstracts: (in press)*.

402. Gutierrez-Garcia, F.G., Chen, Y., **Ayala, A.** 2025. VISTA Expression and Function in Pulmonary and Hepatic Tissue Resident Macrophages During Sepsis-Induced ARDS. *Shock (On-line Abst. System [in press])*.

INVITED PRESENTATIONS

Symposia/Workshop Presentations

National/International:

1. Speaker, mini symposia entitled: "Trauma/ischemia induced alterations in cellular signaling." Talk entitled: 'Hemorrhage (HEM) induced alterations in macrophage signal transduction', 3rd International Congress on the Immune Consequences of Trauma, Shock and Sepsis: Mechanisms and Therapeutic Approaches. Munich, Germany, March 3, 1994.
2. Panelist, workshop entitled: "The Making of an Investigator." 17th Annual Conference on Shock. Big Sky, MT, June 5, 1994.
3. Speaker, symposium entitled: "Humoral and Cellular Immunity after Trauma and Sepsis", talk entitled: 'Expression and Presentation of Major Histocompatibility Complex in Leukocytes.' 18th Annual Conference on Shock. Grove Park, NC, June 14, 1995.
4. Speaker, symposium entitled: "Toxins and Mediators in Sepsis", talk entitled: 'Sepsis induced immune dysfunction'. Conference on 'Sepsis and Septic Complications', Toronto, Canada, October 12-13, 1995.
5. Speaker, mini symposia entitled: "Apoptosis: the role of programmed cell death in acute inflammatory response", talk entitled: 'Apoptosis in the immune system during sepsis: different findings in different cell types', 4th International Congress on the Immune Consequences of Trauma, Shock and Sepsis: Mechanisms and Therapeutic Approaches. Munich, Germany, March 6, 1997.
6. Speaker, mini symposia entitled: "TH1/TH2 type response in trauma and infection", talk entitled: 'The anti-inflammatory mediator response: the murine TH2 response following shock and sepsis', 4th International Congress on the Immune Consequences of Trauma, Shock and Sepsis: Mechanisms and Therapeutic Approaches. Munich, Germany, March 7, 1997.

7. Speaker, symposium entitled: "Apoptosis (Heat Shock Protein)", talk entitled: 'Immune Cell Apoptosis in Trauma/Shock/Sepsis.' 20th Annual Conference on Shock. Indian Wells, CA, June 18, 1997.
8. Speaker, workshop entitled: "Changes in the Immune System in Trauma and Sepsis", talk entitled: 'The Th1/Th2 Immune Response Following Shock and Sepsis' at the International Workshop on Surgery and Critical Care: Cellular and Molecular Mechanisms. Bonn, Germany, March 6, 1998.
9. Speaker, Panel 3: "Animal Models of Hemorrhagic Shock", presentation entitled: "Rates of Hemorrhage and Outcome in Animal Models", as part of: Conference on Resuscitation Fluid Design and Resuscitation Protocols for Combat Casualties by the *Institute of Medicine of the National Academy of Sciences*, Washington, D.C., September 17, 1998.
10. Speaker, Education & Scientific symposium entitled: "Hemorrhagic Shock: Clinical Experimental Updates." Presentation entitled: "Non-specific Immune Response to Hemorrhagic Shock." 28th Annual Society of Critical Care Medicine Meeting. San Francisco, CA, January 27, 1999.
11. Speaker, Session 2: "Cellular Effectors of the Immune Response", presentation entitled: "Lymphocytes, Anergy, Apoptosis and Cell Activation." as a part of the Round Table Conference on, The Immune Response in the Critically Ill. Brussels, Belgium. March 13-15, 1999.
12. Speaker, mini symposia entitled: "The Physiology and Cellular Biology of Acute Illness", presentation entitled: "Apoptosis". 5th International Congress on the Immune Consequences of Trauma, Shock and Sepsis, Munich, Germany, February 29-March 5, 2000.
13. Speaker, mini symposia entitled: "Apoptosis in Shock Inflammation and Sepsis: Cellular Mechanisms, Part I", presentation entitled: "Regulation of lymphoid apoptosis in sepsis and shock." 5th International Congress on the Immune Consequences of Trauma, Shock and Sepsis, Munich, Germany, February 29-March 5, 2000.
14. Speaker, mini symposia entitled: "TH1, TH2 Cell Response under Stressful Conditions", presentation entitled: "The anti-inflammatory mediator response in polymicrobial sepsis." 5th International Congress on the Immune Consequences of Trauma, Shock and Sepsis, Munich, Germany, February 29-March 5, 2000.
15. Speaker, mini-symposia entitled: "Apoptosis and Inflammatory Morbidities: A Link?", presentation entitled: "Apoptosis in polymicrobial sepsis.", 5th International Congress on the Immune Consequences of Trauma, Shock and Sepsis, Munich, Germany, February 29-March 5, 2000.

16. Speaker, Nobel Symposia No. 124, entitled: "Septicemia and Shock: Pathogenesis and Novel Therapeutic Strategies", presentation entitled: "Fas-Ligand Mediated Apoptosis in Sepsis." Stockholm, Sweden, May 15-17, 2003.
17. Speaker, mini symposia entitled: "Apoptosis with Traumatic Stress and Sepsis", presentation entitled: "Extrinsic events in the apoptotic response to sepsis/shock." 6th International Congress on the Immune Consequences of Trauma, Shock and Sepsis, Munich, Germany, March 2-6, 2004.
18. Speaker, mini symposia entitled: "Dendritic Cells in the Innate Response to Infection", presentation entitled: "Divergent Effects of Sepsis on Dendritic Cell Function" 6th International Congress on the Immune Consequences of Trauma, Shock and Sepsis, Munich, Germany, March 2-6, 2004.
19. Speaker, mini symposia entitled: "Simple Models of Infection, Inflammation and Injury", presentation entitled: "Shock and hemorrhage" as a part of the conjoined Shock Society/International Sepsis Forum Symposium examining 'The Translational Biology of Acute Illness: Pre-Clinical Models of Shock, Trauma and Sepsis' at the Oak Island Conv. Ctr., Western Shore, Nova Scotia, Canada, June 2-4, 2004.
20. Presidential Keynote Address: "Adequate Resuscitation?", 27th Annual Conference on Shock, Shock Society, Halifax, Canada, June 5-8, 2004.
21. Speaker in Symposium VII: 'Pathogenesis of Sepsis and Shock', presentation entitled: "Leukocyte Apoptosis and Its' Significance during Sepsis". Society for Leukocyte Biology 37th Annual Meeting, Toronto, Canada, October 23, 2004.
22. Speaker in Symposium on: 'Basic and Clinical Concepts in Innate Immunity', presentation entitled: "The Role and Regulation of Apoptosis in Sepsis". 8th Biennial Meeting of the Endotoxin Society, Kyoto, Japan, November 15-18, 2004.
23. Speaker in Symposium: 'Apoptosis in Critical Illness', presentation entitled: "Fas Ligand and Pathways of Sepsis-induced Cell Death". 34th Critical Care Congress, Phoenix, AZ, January 16, 2005.
24. Speaker in Symposium (Session C74): 'Mechanisms of Organ Dysfunction during Severe Sepsis', presentation entitled: "'Apoptosis and Organ Failure during Sepsis'". American Thoracic Society 2005 (100th) annual meeting, San Diego, CA, May 24, 2005.
25. Speaker in workshop 4: 'Blood Transfusion and Immunologic Consequences', presentation entitled: "Immunological Consequences of Hemorrhage", 10th International Symposium on Blood Substitutes, Providence, RI, June 14, 2005.

26. Speaker in Symposium: 'New Innovations in Sepsis Research: The Future of Translational Research in Sepsis', presentation entitled: "Small inhibitory RNAs". 35th Critical Care Congress, San Francisco, CA, January 8, 2006.
27. Speaker in Symposium: 'Innate Immunity – Inflammation Biology in the SICU', presentation entitled: "Apoptosis". 35th Critical Care Congress, San Francisco, CA, January 10, 2006.
28. Speaker in Symposia II: Presentation entitled: 'The Problem is Immune suppression/ Impaired Adaptive Immunity'. Presentation entitled: "Blockade of Apoptosis is a Rational Therapeutic Approach". Novartis (formerly Ciba) Foundation Symposia #280: Sepsis-New Insights, New Therapies. London, United Kingdom, February 14, 2006.
29. Keynote address entitled: "Gene Silencing using silencing RNAs in vivo". 12th meeting of the European Shock Society, Ulm, Germany, September 14-16, 2006.
30. Speaker in Symposium: 'What Cell is the "Motor" of the Immune Response to Sepsis', presentation entitled: "Polymorphonuclear Cells and Neutrophils". 36th Critical Care Congress, Orlando, FL, February 16-20, 2007.
31. Speaker, mini-symposia entitled: "T-Regulatory Cell Populations under Stressful Conditions", presentation entitled: "Changes in murine regulatory T-cell subsets and markers". 7th International Congress on the Immune Consequences of Trauma, Shock and Sepsis, Munich, Germany, March 13-17, 2007.
32. Speaker, mini-symposia entitled: "Manipulating Apoptosis for Therapeutic Gain – Translating Science into Therapy.", presentation entitled: "Novel Therapeutic approach III: siRNA." 7th International Congress on the Immune Consequences of Trauma, Shock and Sepsis, Munich, Germany, March 13-17, 2007.
33. Speaker, mini symposia entitled: "Mucosal Immunity in Critical Illness.", presentation entitled: "Humoral and cellular immune responses in critical illness." 7th International Congress on the Immune Consequences of Trauma, Shock and Sepsis, Munich, Germany, March 13-17, 2007.
34. Speaker, CIMIT forum, presentation entitled: "The Role of Systemic Immune Cell Signaling in Whole Body Ischemia/Reperfusion (I/R) injury (Hemorrhagic Shock)." Boston, MA, October 16, 2007.
35. Speaker, symposium entitled: "Co-stimulatory Receptors in Sepsis", talk entitled: 'Innate/Adaptive Counterpoise.' 32nd Annual Conference on Shock. San Antonio, TX, June 8, 2009. Speaker in scientific session: 'Hemodynamic Optimization after Cardiac or Trauma Resuscitation', presentation entitled: "Common Physiology of Post Cardiac Arrest Syndrome: Traumatic Injury, Sepsis and Acute Lung Injury". In the Resuscitation

Science Symposium (ReSS) as a part of American Heart Association (AHA) Meeting in Orlando, FL, November 15, 2009.

36. Speaker, mini-symposia entitled: "Immune Dysfunction in Sepsis and Injured Animals/Patients: Update on the Immuno-Pathogenesis and -Pathophysiology" presentation entitled: "Something Innately Different about PD-1 in Sepsis", 8th International Congress on the Immune Consequences of Trauma, Shock and Sepsis, Munich, Germany, March 9-13, 2010.
37. Speaker, mini-symposia entitled: "Immunomodulatory Therapy of Sepsis – The Next Great Advance" presentation entitled: "Modification of Co-Stimulatory Molecules in Sepsis", 8th International Congress on the Immune Consequences of Trauma, Shock and Sepsis, Munich, Germany, March 9-13, 2010.
38. Speaker, symposia II: "Altered Inhibitory Receptor Activity Modulates Depressed Host Response in Sepsis/Shock/Inflammation"; presentation entitled: "An Innately Different Perspective of Co-Stimulatory Receptors in Sepsis". 33rd Annual Conference on Shock, Shock Society, Portland, OR, June 5-8, 2010.
39. Speaker, symposia entitled: "The Science and Management of Sepsis: The Emergency Medicine Perspective" presentation entitled: "Immune Response and Toll-like Receptors (TLRs): Signaling Systems in the Sepsis Cascade" CME Mega-symposium series-the American College of Emergency Physicians, Las Vegas, NV, September 29, 2010.
40. Speaker, symposia entitled: "Systemic & Neuro-Inflammation" presentation entitled: "Anti-Inflammatory Regulators of Extra-Pulmonary Acute Lung Injury" International Society of Anesthetic Pharmacology symposium, San Diego, CA, October 15, 2010.
41. Speaker in Symposium: 'What's New in Sepsis Treatment', presentation entitled: "Manipulating the CARS Response". 40th Critical Care Congress, San Diego, CA, January 18, 2011.
42. Speaker in Symposium: 'Molecular Sepsis', presentation entitled: "Using RNAi to Fight Sepsis". 40th Critical Care Congress, San Diego, CA, January 19, 2011.
43. Speaker in Symposium: 'Novel Mediators of Inflammation & Injury', presentation entitled: "PD-1: A new potential target in sepsis". 41st Critical Care Congress, Houston, TX, February 7, 2012.
44. Speaker in Symposium: "Cellular and Molecular Responses to Hemorrhagic Shock"; presentation entitled: "Precipitating Lung Injury from the combined Insults of Hemorrhagic Shock/Sepsis: From Cell Death to Programmed Cell Death Receptor-1". 7th Congress of the International Federation of Shock & the 35th Annual Conference on Shock, Shock Society, Miami Beach, FL, June 8-13, 2012.

45. Speaker in Symposium: 'Immuno-paralysis', presentation entitled: "The Basic Science of Immuno-paralysis Following Trauma". 42nd Critical Care Congress, San Juan, PR, January 22, 2013.
46. Speaker in Symposium: 'Non-conventional Modulators of Inflammation', presentation entitled: "T Regulatory Cells in Sepsis". 42nd Critical Care Congress, San Juan, PR, January 22, 2013.
47. Keynote address entitled: "Co-Inhibitory Molecules as Novel Mediators of the Pathology of Sepsis/Shock." Invited presentation of the 9th National Congress of Advances in Anesthesiology and Resuscitation, in Hangzhou, P.R. China, March 29th-31st, 2013.
48. Speaker in Plenary Session IV: 'Novel prospective on co-inhibitor function and modulation in inflammation and disease', presentation entitled: "BTLA as innate immunity inhibitor". Society for Leukocyte Biology 46th Annual Meeting, Newport, RI, October 22, 2013.
49. Speaker, symposia V: "Mechanisms and Treatment of Injury-Induced Immunosuppression "; presentation entitled: "Co-inhibitory Receptors". 37th Annual Conference on Shock, Shock Society, Charlotte, NC, June 7-10, 2014.
50. Keynote address entitled: "A role for co-inhibitory molecules in the immune response to sepsis/shock." Invited presentation at the 2015 Chinese Annual Conference of Anesthesiology, in Xi'an (Shanxi province), P.R. China, September 11th, 2015.
51. Speaker in Symposium on: 'Role of Alarmins in Shock and Sepsis', presentation entitled: "From PAMPS and Alarmins to tolerogens in shock/sepsis: what we are learning from innate regulatory lymphocytes", 8th Congress of the International Federation of Shock Society, Tokyo, Japan, October 3rd, 2016.
52. Speaker in Symposium on: 'Pre-clinical Modeling in Sepsis: exchanging opinions and forming recommendations', presentation entitled: "WG-3: Organ injury/dysfunction endpoints.", 9th Wiggers-Bernard Conference, Vienna, Austria, May 4-5, 2017.
53. Speaker in Symposium on: 'What Are the Drivers of Multiple Organ Failure?', presentation entitled: "The Immune System", 47th annual meeting of the Society of Critical Care Medicine, San Antonio, TX, February 26th, 2018.
54. Co-Moderator (with David Williams, PhD) in Workshop on: "Grant Writing Tips and Tricks". 41st Annual Conference on Shock, Shock Society, Phoenix, AZ, June 10, 2018.
55. Invited Participant & Speaker at 'NIH-NIGMS Workshop on Sepsis'; presentation entitled: 'Animal models in sepsis research: benefits, risks, alternatives ', Bethesda, MD, November 7th, 2018.

56. Co-Moderator (with Dr. Daithi Heffernan) for ‘Scientific Session VI - Focused Paper Presentations’. Conjoined 39th annual meeting of the Surgical Infections Society (SIS) & the 41st Annual Conference on Shock, Shock Society, Coronado, CA, June 9, 2019.
57. Panelist (with Drs. C. Sims, D. Lautenberger, F. Moore, C. Deutschman & M. Root) in Workshop on: "Mentoring in the ‘#MeToo Movement’ era". 42nd Annual Conference on Shock, Shock Society, Coronado, CA, June 9, 2019.
58. Speaker in Symposium on: ‘Critical Care Immunotherapy’, presentation entitled: “Biologic Basis of Immunotherapy”, 50th annual meeting of the Society of Critical Care Medicine/ 2021 SCCM Virtual Congress, February 2nd, 2021.
59. Keynote speech, entitled: “Immune Suppression after Shock & Sepsis”, at the 6th Tianfu (P.R. China) international conference on Emergency and Care Medicine, virtual presentation, May 15, 2022.
60. Speaker, Parallel Session IX: “Beyond Shock: Persistent Immunosuppression and Chronic Critical Illness”; presentation entitled: “Post-Trauma/ Sepsis Immunosuppression”. 45th Annual Conference on Shock, Shock Society, Toronto, Canada, June 7, 2022.
61. ‘SLB Legacy’ Keynote address entitled: “Mechanisms of Immune Dysfunction in Sepsis/Shock: Some Unique Roles for Checkpoint Proteins”. 57th Annual meeting of the Society of Leukocyte Biology (SLB), East Lansing, MI, October 23, 2024.

Invited Presentation/Visiting Professor

National/International:

1. **Ayala, A.** 1997. Immune Dysfunction in Hemorrhagic Shock. Cornell University Medical Center, Department of Surgery, Research Seminar Series, New York Hospital, New York, NY, April 28th.
2. **Ayala, A.** 1999. Mediators of Lymphocyte Anergy and Apoptosis in Polymicrobial Sepsis. Harvard Medical School, Department of Surgery, Clinical and Research Conference on Nutrition and Metabolism, Brigham and Women's Hospital, Boston, MA, March 23rd.
3. **Ayala, A.** 1999. Lymphocyte Activation, Anergy and Apoptosis in Polymicrobial Sepsis. Cornell University Medical Center, Department of Surgery, Research Seminar Series, New York Hospital, New York, NY, September 8th.

4. **Ayala, A.** 2000. Immune Cell Anergy and Apoptosis in Sepsis. BASF Bioresearch Corporation, Worcester, MA, May 11th.
5. **Ayala, A.** 2000. Immune dysfunction in sepsis and shock: from anergy to apoptosis. IDUN Pharmaceuticals, La Jolla, CA, October 30th.
6. **Ayala, A.** 2001. Pathological aspects of the apoptotic response of immune cells to sepsis and shock. Washington University, Department of Surgery, St. Louis, MO, May 16th.
7. **Ayala, A.** 2001. Pathological aspects of the apoptotic response of immune cells to sepsis and shock. North Shore-Long Island Jewish Hospitals, Department of Surgery, Manhasset, NY, June 26th.
8. **Ayala, A.** 2001. Pathological aspects of the immune response to sepsis and shock. University of Rhode Island, Department of Biochemistry, Molecular Biology and Microbiology, Kingston, RI, November 26th.
9. **Ayala, A.** 2002. Pathological aspects of apoptosis in severe sepsis and shock. University of Alabama at Birmingham, College of Medicine, Center for Surgical Research. Department of Surgery, Birmingham, AL, April 22nd.
10. **Ayala, A.** 2004. Shock Induced Priming for Acute Lung Injury: Discerning the Contribution of Apoptosis. - Visiting Lecturer-UMDNJ-Newark, Department of Surgery, Newark, NJ, September 16th.
11. **Ayala, A.** 2004. The Role and Regulation of Apoptosis in Sepsis - Surgical Grand Rounds-Visiting Lecturer-UMDNJ-Newark, Department of Surgery, Newark, NJ, September 17th.
12. **Ayala, A.** 2004. Divergent Mechanisms Contributing to Immune Dysfunction Associated with Sepsis - Visiting Lecturer-Loyola School of Medicine, Burn, Shock & Trauma Institute, Maywood, IL, December 8th.
13. **Ayala, A.** 2004. Shock Induced Priming for Acute Lung Injury in Mice: Discerning the Role of Apoptosis - Visiting Lecturer-LIJ-North Shore Research Institute, Manhasset, NY, December 14th.
14. **Ayala, A.** 2005. Discerning the Contribution of Apoptosis to Shock Induced Priming for Acute Lung Injury – Research Presentation, Department of Pulmonary Medicine, LSU Medical Center, New Orleans, LA, February 22nd.

15. **Ayala, A.** 2005. Cell Deaths and its Significance during Sepsis and Shock. The Infection and Immunology Visiting Lecturer Series, Department of Microbiology, Immunology and Parasitology, LSU Medical Center, New Orleans, LA, February 22nd.
16. **Ayala, A.** 2006. Blockade of apoptosis as a rational therapeutic strategy for the treatment of sepsis and shock. Children's Memorial Hospital Research Institute/ Northwestern University School of Medicine, Chicago, IL, May 22nd.
17. **Ayala, A.** 2006. Apoptotic Processes in the Development of Acute Lung Injury Pursuant to Shock. Universitat Ulm. Ulm, Germany, September 18th.
18. **Ayala, A.** 2007. Apoptosis and its' Significance to Immune/Organ Dysfunction during Sepsis and Shock. Ludwig Boltzman Institute for Experimental and Clinical Traumatology/Austrian Cluster of Tissue Regeneration. Vienna, Austria, March 12th.
19. **Ayala, A.** 2009. Anti-Inflammatory Regulators of Extra-Pulmonary Acute Lung Injury: Minor Immune Cell Sub-Populations with Significant Effects. Feinstein Institute for Medical Research/ General Clinical Research Center at Manhasset, NY, September 15th.
20. **Ayala, A.** 2009. A Novel Role for the Inhibitory co-receptor, PD-1, in the Innate Immune Response to Sepsis. Department of Pathology seminar series, Boston University School of Medicine, Boston, MA, November 6th.
21. **Ayala, A.** 2010. An Innately Different Perspective of Co-Stimulatory Receptors in Sepsis. University of Kentucky, Pediatric Research Institute, Department of Pediatrics, Lexington, KY, May 20th.
22. **Ayala, A.** 2010. A Novel Role for the Inhibitory co-receptor, Programmed Cell Death Receptor (PD)-1, and its Ligand, in the Immune Response to Sepsis. 2nd Military Medical University at Shanghai, Shanghai, P.R. China, October 25th.
23. **Ayala, A.** 2010. A Novel Role for the Inhibitory co-receptor, Programmed Cell Death Receptor (PD)-1, and its Ligand, in the Immune Response to Sepsis. Section of Gastroenterology, Xijing Hospital, 4th Military Medical University, Xi'an, P.R. China, October 28th.
24. **Ayala, A.** 2010. A Novel Role for the Inhibitory co-receptor, Programmed Cell Death Receptor (PD)-1, and its Ligand, in the Immune Response to Sepsis. Division of Immunology, Tsinghua University School of Medicine, Beijing, P.R. China, November 1st.
25. **Ayala, A.** 2011. Novel Approaches to Sepsis: Manipulating the CARS [the compensatory anti-inflammatory response syndrome] Response. Department of Surgery,

- 2nd Affiliated Hospital, Zhejiang University College of Medicine, Hangzhou, P.R. China, May 16th.
26. **Ayala, A.** 2011. Using RNAi to Silence Sepsis/Shock-Induced Cell Death (Apoptosis). Department of Surgery, 2nd Affiliated Hospital, Zhejiang University College of Medicine, Hangzhou, P.R. China, May 17th.
 27. **Ayala, A.** 2012. Novel Approaches to Sepsis: Manipulating the CARS Response. MedImmune Inc., Gaithersburg, MD, March 14, 2012.
 28. **Ayala, A.** 2013. Pathological Processes in Shock/ Sepsis Induced Acute Lung Injury: From Cell Death to Programmed Cell Death Receptor-1, for Affinity Research Collaborative in the Department of Surgery at Beth-Israel Deaconess Hospital, Boston, MA, January 24, 2013.
 29. **Ayala, A.** 2013. Co-Inhibitory Molecules as Novel Mediators of the Pathology of Sepsis/Shock. Invited presentation for the Department of Anesthesiology and Intensive Care Medicine/Changhai Hospital-2nd Military Medical University, Shanghai, P.R. China, March 27th.
 30. **Ayala, A.** 2013. Pathological Processes in Extra-Pulmonary Acute Lung Injury. Invited presentation for the Department of Emergency and Critical Care Medicine/Shanghai East Hospital-Affiliated with TongJi University, Shanghai, P.R. China, March 27th.
 31. **Ayala, A.** 2013. PD-1 & Co-Inhibitory Molecules as Novel Mediators of the Pathology of Sepsis/Shock. Invited presentation/consultation for Amplimmune Inc., Gaithersburg, MD, August 28th.
 32. **Ayala, A.** 2013. Pathological Processes in Indirect-Acute Lung Injury: From Cell Death to Programmed Cell Death Receptor-1. Invited presentation as a part of Oklahoma Center for Respiratory Infectious Diseases seminar series at the Oklahoma University Health Sciences Center, Oklahoma City, OK, December 11th.
 33. **Ayala, A.** 2014. “Novel Pathological Processes in Shock/Sepsis: A Role for Co-Inhibitory Receptors/Check-point proteins”. Invited presentation as a part of Fall 2014 Seminar Series of the Dept. Basic Sci. at Univ. N. Dakota Sch. Med. & Hlth. Sci., Grand Forks, ND, November 13th.
 34. **Ayala, A.** 2014. “Novel Pathological Processes in Shock/Sepsis: A Role for Co-Inhibitory Receptors/Check-point proteins”. Invited presentation as a part of M.S.U. Dept. Surgery – Grand Rounds, Lansing, MI, December 4th.
 35. **Ayala, A.** 2015. “A role for co-inhibitory molecules in the immune response to sepsis/shock.” Invited presentation for the Department of Anesthesiology and Intensive

Care Medicine/Changhai Hospital-2nd Military Medical University, Shanghai, P.R. China, September 9th.

36. **Ayala, A.** 2015. “A role for co-inhibitory molecules in the immune response to sepsis/shock.” Invited presentation for the Department of Emergency and Critical Care Medicine/Shanghai East Hospital-Affiliated with Tongji University, Shanghai, P.R. China, September 10th.
37. **Ayala, A.** 2020. “Homeostatic Mechanisms in Sepsis/Shock: Some Unique Roles for Check-point Proteins.” Invited ‘Sepsis Center Seminar’ for the Department of Biochemistry and Molecular Biology, Saint Louis University School of Medicine, St. Louis, MO, March 9th. (*Canceled due to COVID-19 pandemic*)
38. **Ayala, A.** 2024. “Some Unique Roles for Checkpoint Proteins in the Dys-homeostatic Process of Shock/ Sepsis.” Invited presentation as a part of the ‘Department of Trauma and Anesthesiology’ research seminar series sponsored by the Shock, Trauma and Anesthesiology Research (STAR) Center at the University of Maryland School of Medicine, Baltimore, MD, December 16th.

at Michigan State University (local/regional):

1. **Ayala, A.** The effects of hemorrhage on macrophage mediated antigen presentation. Department of Surgery Research Seminar Series, St. Lawrence Hospital, Lansing, MI, December 1988.
2. **Ayala, A.** Lymphokines in immune function. St. Mary's Hospital, Saginaw, MI, February 1989.
3. **Ayala, A.** Hemorrhage induced changes in macrophage function. Department of Surgery Research Seminar Series, St. Lawrence Hospital, Lansing, MI, November 1989.
4. **Ayala, A.** 1990. Alterations in macrophage function during polymicrobial sepsis. Department of Surgery Research Seminar Series, Michigan State University-St. Lawrence Clinic, December 13.
5. **Ayala, A.** 1991. Cytokines and Immunity, and as Immuno Modulators. Michigan State University Cancer Treatment Consortium, Midland, MI, April 12.
6. **Ayala, A.** 1991. Enhanced Kupffer cell cytotoxic activity following hemorrhage: a potential cause of hepatocellular injury. Department of Surgery Research Seminar Series, Michigan State University-St. Lawrence Clinic, November 14.
7. **Ayala, A.** 1992. Overview of Shock and Trauma Research at Michigan State University. Michigan Association of Medical Transcriptionists, Frankenmuth, MI, September 19.

8. **Ayala, A.** 1993. Insights into the mechanism by which interferon-gamma improves macrophage function following hemorrhage. Department of Surgery Research Seminar Series, Michigan State University-St. Lawrence Clinic, February 11.
9. **Ayala, A.** 1993. IL-6: An Overview. Department of Hematology/Oncology, Michigan State University, March 12.
10. **Ayala, A.** 1994. Sepsis induced programmed cell death. Department of Surgery Research Seminar Series, Michigan State University-St. Lawrence Clinic, September 15.

at Brown University/Rhode Island Hospital (local/regional):

1. **Ayala, A.** 1996. Immune dysfunction in murine polymicrobial sepsis: mediators, macrophages and lymphocytes. Division of Surgical Research-Rhode Island Hospital Seminar Series, March 12.
2. **Ayala, A.** 1996. Trauma induced suppression of antigen presentation. Presented as a part of Molecular Microbiology and Immunology Seminar Series. Brown University School of Medicine. September 26th.
3. **Ayala, A.** 1997. Apoptosis in the immune system during sepsis: different findings in different cell types. Rhode Island Hospital Research Journal Club. February 4th.
4. **Ayala, A.** 1998. Apoptosis. Basic Cell Biology Conference for Division of Renal Disease at Rhode Island Hospital, April 15.
5. **Ayala, A.** 2000. Immune Cell Anergy and Apoptosis in Sepsis. Pulmonary Research Conference. Brown University School of Medicine, May 24.
6. **Ayala, A.** 2000. Is there a pathologic role for apoptosis in septic liver injury? Liver Seminar Series - Liver Research Center at Rhode Island Hospital, December 7.
7. **Ayala, A.** 2003. Fas-Ligand Mediated Apoptosis in Sepsis. Liver Seminar Series - Liver Research Center at Rhode Island Hospital, June 5.
8. **Ayala, A.** 2004. Extrinsic Events in the Apoptotic Response to Sepsis. Invited Res. Lecture - part of Ninth Annual Henry Randall Distinguished Lectureship in Surgical Sciences, February 24.
9. **Ayala, A.** 2004. Shock Induced Priming for Acute Lung Injury in Mice: Discerning the Role of Apoptosis. Division of Surgical Research Seminar Series, December 21.

10. **Ayala, A.** 2005. Discerning the contribution of apoptotic signaling in shock induced priming for acute lung injury. Department of Molecular, Microbiology & Immunology Seminar Series-Brown University School of Medicine. September 22.
11. **Ayala, A.** 2005. Discerning the contribution of apoptotic signaling in shock induced priming for acute lung injury. Pulmonary Research Conference-Brown University School of Medicine. November 7.
12. **Ayala, A.** 2010. An Innately Different Perspective of PD-1's role in Sepsis. Brown University Graduate Pathobiology-Spring Semester Seminar Series. February 11.
13. **Ayala, A.** 2010. A Novel Role for the Inhibitory co-receptor, Programmed Cell Death Receptor (PD)-1, and its Ligand, in the Immune Response to Sepsis. Surgical Grand Rounds, Department of Surgery, Rhode Island Hospital-Alpert School of Medicine at Brown University, Providence, RI, December 7th.
14. **Ayala, A.** 2013. Pathological Processes in Indirect-Acute Lung Injury: From Cell Death to Programmed Cell Death Receptor-1. Division of Surgical Research-Rhode Island Hospital Seminar Series, December 3rd.
15. **Ayala, A.** 2016. Immuno-inflammatory mechanisms in shock/sepsis: what we are learning from innate regulatory lymphocytes. Division of Surgical Research Seminar Series, November 8th.
16. **Ayala, A.** 2017. Pathological Processes in Shock/Sepsis: A Novel Role for Co-inhibitory Receptors/Check-point proteins. Brown University Graduate Pathobiology-Spring Semester Seminar Series. March 9th.
17. **Ayala, A.** 2017. Novel Role for the Co- inhibitory receptor/ Check-point Protein, PD-1 in the Development of Morbid Aspects of Sepsis/ARDS. Brown Investigators in Respiratory Disease conference (seminar). December 4th.
18. **Ayala, A.** 2018. Novel Roles for the Inhibitory Co-receptor, Programmed Cell Death Receptor (PD)-1, and its Ligands, in the Response to Sepsis/Shock. Brown University-MCB Graduate Program Spring Semester Seminar Series. February 14th.
19. **Ayala, A.** 2018. Lab Management (One PI's perspective) or "Opening your own small business". CVPB-COBRE. April 6th.
20. **Ayala, A.** 2018. Novel Roles for the Checkpoint Protein, Programmed Cell Death Receptor (PD)-1 and its Ligands, in the Response to Sepsis/Shock. The COBRE for Skeletal Health and Repair seminar series. November 28th.

21. **Ayala, A.** 2018. Animal models in sepsis research: benefits, risks, alternatives. Division of Surgical Research Seminar Series, December 19th.
22. **Ayala, A.** 2020. Mechanisms of Immune Dysfunction and Morbid Outcome in Response to Shock/Sepsis. The Leadership Alliance seminar series. July 14th.
23. **Ayala, A.** 2021. Homeostatic Mechanisms in Sepsis/Shock: Some Unique Roles for Checkpoint Proteins. The CPVB-COBRE seminar series. April 30th.
24. **Ayala, A.** 2021. *The Ayala Lab: Mechanisms of Immune Dysfunction and Morbid Outcome in Response to Shock/Sepsis.* The BR RTP seminar series. May 16th.
25. **Ayala, A.** 2022. Mechanisms of Immune Dysfunction and Morbid Outcome in Response to Shock/Sepsis. The Leadership Alliance seminar series. July 14th.
26. **Ayala, A.** 2023. Homeostatic Mechanisms in Sepsis/Shock: Some Unique Roles for Checkpoint Proteins. Department of Surgery-Grand Rounds. Lab overview seminar series. January 17th.
27. **Ayala, A.** 2023. Panelist (with Sonia Mayoral, PhD. [Assist. Prof.], Joshua Burrow, PhD. [Post-doc. Fellow], Kevin De Leon [Grad. Student] & Kimberly Meza [Moderator/Grad. Student]) in workshop on: "Path to the Professoriate". Brown University chapter of SACNAS, May 29th.
28. **Ayala, A.** 2023. Mechanisms of Immune Dysfunction in Sepsis/Shock: Some Unique Roles for Checkpoint Proteins. Therapeutic Sciences Graduate Program-Faculty/ Lab overview presentation to new graduates. September 20th.
29. **Ayala, A.** 2024. Mechanisms of Immune Dysfunction in Sepsis/Shock: Some Unique Roles for Checkpoint Proteins. Alpert Sch. Med. at Brown Univ.-Basic & Translational Research Program/ Lab overview presentation to summer Med. Student res. fellows. July 11th.

GRANTS

Active Grant Support:

- 2024-2026 NIH-NIGMS Administrative Supplement to Promote Diversity in Health-Related Research: "Mechanisms of Immune Dysfunction and Morbid Outcome in Response to Shock/Sepsis."
 Grant No.: 3 R35 GM118097-09S3
Principal Investigator: Alfred Ayala

Total Support = \$125,932 in direct & indirect cost (for 2024-2026).

- 2024 NIH-NIGMS Administrative Supplement for Equipment: "Mechanisms of Immune Dysfunction and Morbid Outcome in Response to Shock/Sepsis."
Grant No.: 3 R35GM118097-09S2
Principal Investigator: Alfred Ayala
Total Support = \$97,850 in direct & indirect cost (for 2024).
- 2016-2026 NIH-NIGMS Research Grant: "Mechanisms of Immune Dysfunction and Morbid Outcome in Response to Shock/Sepsis."
Grant No.: 2 R35 GM118097
Principal Investigator: Alfred Ayala
Total Support = \$ 3,793,498 in direct & indirect cost (for 2021-2026).
- 2022-2024 NIH-NIGMS Administrative Supplement to Promote Diversity in Health-Related Research: "Mechanisms of Immune Dysfunction and Morbid Outcome in Response to Shock/Sepsis."
Grant No.: 3 R35 GM118097-07S1
Principal Investigator: Alfred Ayala
Total Support = \$160,058 in direct cost (for 2022-2024).
- 2013-2028 NIH-NIGMS COBRE Grant: "Endothelial Injury and Repair: Cardiopulmonary Vascular Biology"
Grant No.: P20 GM103652
Program Director: Sharon Rounds
Executive Committee Member & Mentor (Sean Monaghan, Sub-Project ID: 6089; Entitled: "The Role of Alternative RNA Splicing on Endothelial Cell Barrier Dysfunction in Acute Respiratory Distress Syndrome"): Alfred Ayala
Total Support = \$10,294,730 in direct and indirect cost (for 2018-2023).
- 2001-2027 NIH-NHLBI Training grant: "Short-term Training for Minority Students."
Grant No.: T35 HL67704
Principal Investigator: Elizabeth Harrington
Faculty Trainer/Exec. Comm.: Alfred Ayala
Total Support = \$303,774 in direct and indirect cost (for 2019-2022).
- 2004-2025 NIH-NIGMS Training grant: "Trauma-inflammation Research Training."
Grant No.: T32 GM065085
Program Director/Exec. Comm./Faculty Trainer: Alfred Ayala
Total Support = \$ 1,295,259 in direct and indirect cost (for 2020-2025).
- 2021-2026 NIH-NIGMS Research Grant: "Improving Sepsis Care with Deep RNA Sequencing Data."

Grant No.: R35 GM142638
Principle Investigator: Sean Monaghan
Collaborator (unpaid): Alfred Ayala
Total Support = \$ 1,978,996 in direct and indirect cost (for 2021-2026).

Submitted/Pending Grant Proposals:

- 2025-2030 NIH-NIGMS Training grant: "Trauma-inflammation Research Training."
Grant No.: T32 GM065085
Program Director/Exec. Comm./Faculty Trainer: Alfred Ayala
Total Support = \$1,536,755 in direct and indirect cost (for 2025-2030).
Impact score: 27
- 2022-2027 NIH-NHLBI Research Grant: "SOX17/RUNX1 Axis Regulates Endothelial Progenitor Cell Fate in the Pathogenesis of Pulmonary Arterial Hypertension."
Grant No.: R01 HL100520
Principle Investigator: Olin Liang
Collaborator: Alfred Ayala
Total Support = \$ 1,978,996 in direct and indirect cost (for 2022-2027).
- 2024-2026 NIH-NIGMS Administrative Supplement to Promote Diversity in Health-Related Research: "Mechanisms of Immune Dysfunction and Morbid Outcome in Response to Shock/Sepsis."
Grant No.: 3 R35 GM118097-09S1
Principal Investigator: Alfred Ayala
Total Support = \$121,216 in direct cost (for 2024-2026).

Past Grant Support:

- 1991-1992 NIH James A. Shannon Directors' Award: "Differential Effects of Sepsis on Macrophage Function."
Grant No.: R55 GM46354
Principal Investigator: Alfred Ayala
Total Support = \$100,000 in direct and indirect cost.
- 1991-1995 NIH Research Grant: "Maintenance of Organ Function Following Injury."
Grant No.: 2 RO1 GM39519
Principal Investigator: Irshad H. Chaudry
Co-Investigator: Alfred Ayala
Total Support = \$879,595 in direct and indirect cost.
- 1991-1995 NIH Research Grant: "Immunological Aspects of Hemorrhage."
Grant No.: 2 RO1 GM37127

Principal Investigator: Irshad H. Chaudry
Co-Investigator: Alfred Ayala
Total Support = \$948,162 in direct and indirect cost.

- 1992-1998 NIH First Award: "Differential Effects of Sepsis on Macrophage Function."
Grant No.: R29 GM46354
Principal Investigator: Alfred Ayala
Total Support = \$506,063 in direct and indirect cost.
- 1995-1999 NIH Research Grant: "Programmed Cell Death: Role in Septic Immune Suppression."
Grant No.: 1 RO1 GM53209
Principal Investigator: Alfred Ayala
Total Support = \$1,265,111 in direct and indirect cost.
- 1997-1998 NIH-NCRR Shared Inst. Grant: "Laser Scanning Confocal Imaging System."
Grant No.: PA-96-017
Principal Investigator: Paul N. McMillian
Major User/Collaborator: Alfred Ayala
Total Support Requested = \$295,454.
- 1995-1999 NIH Research Grant: "Immunological Aspects of Hemorrhage."
Grant No.: 3 RO1 GM37127
Principal Investigator: Irshad H. Chaudry
Co-Investigator: Alfred Ayala
Total Support = \$1,851,064 in direct and indirect cost.
- 1999-2000 NIH Research Grant: "Maintenance of Organ Function Following Injury."
Grant No.: 4 RO1 GM39519
Principal Investigator: Irshad H. Chaudry
Collaborator: Alfred Ayala
Total Support = \$1,721,880 in direct and indirect cost.
- 1999-2000 NIH Research Grant: "Immunological Aspects of Hemorrhage."
Grant No.: 4 RO1 GM37127
Principal Investigator: Irshad H. Chaudry
Collaborator: Alfred Ayala
Total Support = \$2,059,443 in direct and indirect cost.
- 1996-2000 NIH Research Grant: "Hypoxemia/reoxygenation and cytokine - PMN interactions."
Grant No.: 1 RO1 GM53114
Principal Investigator: H. Hank Simms

Collaborator: Alfred Ayala
Total Support = \$1,851,064 in direct and indirect cost.

- 2000-2001 NIH-NCRR Shared Inst. Grant: "High Performance Flow Cytometry - Cell Sorting System."
Grant No.: PAR-99-031
Principal Investigator: Paul N. McMillian
Major User/Collaborator: Alfred Ayala
Total Support Requested = \$456,254.
- 1999-2003 NIH Research Grant: "Differential Effects of Sepsis on Macrophage Function."
Grant No.: R01 GM46354
Principal Investigator: Alfred Ayala
Total Support = \$1,068,306 in direct and indirect cost.
- 2001-2003 Charles H. Hood Foundation-Childs Health Research Grants: "Viral Modulation of the Immune Response."
Grant No.:
Principal Investigator: Lesley A. Doughty
Collaborator: Alfred Ayala
Total Support = \$100,000
- 2004-2005 NIH-NIGMS Mentored Clinician Scientist Award: "Viral Modulation of the Immune Response."
Grant No.: K08-GM71568
Principal Investigator: Lesley A. Doughty
Mentor: Alfred Ayala
Total Support = \$475,000
- 2004-2005 NIH-NCRR Shared Inst. Grant: "Digitized Transmission Electron Microscope."
Grant No.: RR-03-002
Principal Investigator: Paul N. McMillian
Major User/Collaborator: Alfred Ayala
Total Support Requested = \$271,375.
- 2004-2005 Lifespan Development Award: "Mechanisms of Immune Hyporesponsiveness in Shock: Role of SOCS-1 and SOCS-3 Proteins."
Grant No.:
Principal Investigator: Chun-Shiang Chung
Collaborator: Alfred Ayala
Total support requested: \$28,490

- 2005-2006 Rhode Island Foundation: "Mechanisms of Immune Hyporesponsiveness in Shock: Role of SOCS-1 and SOCS-3 Proteins."
Grant No.: #20050235
Principal Investigator: Chun-Shiang Chung
Collaborator: Alfred Ayala
Total support requested: \$10,000
- 2004-2005 Elli Lilly & Co.: "The Role of Activated Protein C in the Compensatory Anti-inflammatory Response."
Grant No.: Clinical Res.
Program Director: Nicholas Ward
Co-Investigator: Alfred Ayala
Total Support Requested = \$125,369 direct cost.
- 2003-2008 NIH-NIHLBI: "Regulatory Mechanisms of Acute Lung Injury: Phagocyte Apoptosis."
Grant No.: GM/HL73525-01
Principal Investigator: Alfred Ayala
Total Support = \$1,413,967 in direct and indirect cost (for 2003-2008).
- 2003-2008 NIH Research Grant: "Characterization of the Beta-Glucan Receptor."
Grant No.: 2 RO1 GM51493-06
Principal Investigator: Jonathan S. Reichner
Collaborator: Alfred Ayala
Total Support = \$1,813,750 direct and indirect cost (for 2003-2008).
- 2003-2011 NIH-Research Grant: "Neutrophil-Kupffer Cell Interaction during Infection."
Grant No.: R01 DK061511
Principle Investigator: Stephen H. Gregory
Collaborator: Alfred Ayala
Total Support = ~\$1,250,000 in direct and indirect cost.
- 2010-2011 Rhode Island Foundation: "Mediators of Endothelial Cell Dysfunction in the Development of Shock Induced Lung Injury."
Grant No.: #20092951
Principal Investigator: Joanne Lomas-Neira
Collaborator: Alfred Ayala
Total Support Requested = \$15,000 in direct cost.
- 2011-2012 Surgical Infection Society: "Mediators of Endothelial Cell Dysfunction in the Development of Shock Induced ALI."
Grant No.: Junior Faculty Fellowship Award
Program Director: Joanne Lomas-Neira

- Sponsor: Alfred Ayala
Total Support Requested = \$50,000 in direct and indirect cost.
- 2003-2013 NIH-NIHLBI: "Regulatory Mechanisms of Acute Lung Injury: Phagocyte Apoptosis."
Grant No.: 5 RO1 HL R073525-5
Principal Investigator: Alfred Ayala
Total Support = \$1,542,875 in direct and indirect cost (for 2008-2012).
- 2009-2013 NIDDK NRSA: "Fatal Attraction: T lymphocytes and liver endothelial cells during sepsis"
Grant No.: F31 DK083873
Principle Investigator: Noelle Hutchins
Sponsor: Alfred Ayala
Total Fellowship Support = \$163,500 in direct and indirect cost.
- 2011-2013 Shock Society Research Fellowship for Early Career Investigators: "The Role of the invariant NKT-cell in Shock: Regulation of Neutrophil Function."
Grant No.: Jr. Faculty Fellowship
Principal Investigator: Daithi S. Heffernan
Mentor: Alfred Ayala
Total Support = \$60,000
- 2004-2014 NIH-NIGMS: "Trauma-inflammation Research Training."
Grant No.: T32-GM08768
Program Director: Jorge E. Albina
Co-Director/Executive Committee/Faculty: Alfred Ayala
Total Support = \$1,158,247 in direct and indirect cost.
- 2015 NIH-NIGMS Administrative Supplement-Equipment Grant: "Differential Effects of Sepsis on Immune Cell Function."
Grant No.: 3 R01 GM046354-20S1
Principal Investigator: Alfred Ayala
Total Support = \$139,379 in direct cost (for 2015 only).
- 1999-2016 NIH-NIGMS Research Grant: "Programmed Cell Death: Role in Septic Immune Suppression."
Grant No.: 3 RO1 GM053209
Principal Investigator: Alfred Ayala
Total Support = \$1,039,163 in direct & indirect cost (for 2010-2016).
- 2013-2017 NIH-NIGMS Research Grant: "Co-Inhibitory Molecules and the Pathology of Indirect-Acute Lung Injury."

- Grant No.: 1 R01 GM107149
Principal Investigator: Alfred Ayala
 Total Support = \$1,208,400 in direct & indirect cost (for 2013-2017).
- 2013-2017 NIH-NIGMS Research Grant: "Differential Effects of Sepsis on Immune Cell Function."
 Grant No.: 3 R01 GM046354
Principal Investigator: Alfred Ayala
 Total Support = \$1,331,926 in direct and indirect cost (for 2013-2017).
- 2013-2018 NIH-NIGMS COBRE Grant: "Endothelial Injury and Repair: Cardiopulmonary Vascular Biology"
 Grant No.: P20 GM103652
 Program Director: Sharon Rounds
Executive Committee Member & Mentor (Qing Lu, Sub-Project ID:8256; Entitled: "Adenosine and Lung Endothelial Injury"): **Alfred Ayala**
 Total Support = \$7,410,000 in direct and indirect cost (for 2013-2018).
- 2015-2019 NIH-NIGMS Mentored Clinician Scientist Award: "Sepsis Induced Changes in iNKT-Cells and Their Effect on Phagocyte Function."
 Grant No.: K08 GM110495
 Principal Investigator: Daithi Heffernan
Mentor/Sponsor: Alfred Ayala
 Total Support = \$1,094,124 in direct and indirect cost (for 2015-2019).
- 2017-2019 NIH-NIAID: "A murine model of *Pseudomonas aeruginosa* pneumonia secondary to hemorrhagic shock"
 Grant No.: R03 AI130526
 Principal Investigator: Craig Lefort
Consultant: Alfred Ayala
 Total Support = \$161,000 in direct and indirect cost (for 2017-2019).
- 2016-2021 NIH-NIGMS Research Grant: "Mechanisms of Immune Dysfunction and Morbid Outcome in Response to Shock/Sepsis."
 Grant No.: 1 R35 GM118097
Principal Investigator: Alfred Ayala
 Total Support = \$2,960,902 in direct & indirect cost (for 2016-2021).
- 2019-2020 NIH-NIGMS Administrative Supplement to Promote Diversity in Health-Related Research: "Mechanisms of Immune Dysfunction and Morbid Outcome in Response to Shock/Sepsis."
 Grant No.: 3 R35 GM118097-03S1
Principal Investigator: Alfred Ayala

Total Support = \$144,655 in direct cost (for 2019-2020).

2016-2021 NIH-NICHHD Research Grant: "Risk Profiles and Mechanisms of Disease in Maltreated Children."
Grant No.: R01 HD086487
Principal Investigator: Audrey Tyrka
Consultant: Alfred Ayala

Total Support = \$3,289,044 in direct and indirect cost (for 2016-2021).

2004-2023 NIH-NIGMS Training grant: "Trauma-inflammation Research Training."
Grant No.: T32 GM065085
Program Director: Jorge E. Albina
Co-Director/Executive Committee/Faculty: Alfred Ayala
Total Support = \$ 1,295,259 in direct and indirect cost (for 2015-2025)

Serving/Served as Unpaid Consultant/Collaborator on Grant Proposals:

1995-2000 NIH First Award: "Modulation of Hepatocellular Function in Early Sepsis."
Grant No.: R29 GM53008
Principal Investigator: Ping Wang

1998-2006 NIH Research Grant: "Sepsis: Mediators of Cardiovascular Responses."
Grant No. R01 GM57468
Principal Investigator: Ping Wang

1998-2000 NIH Research Grant: "HGF Receptor Gene Regulation and Renal Growth."
Grant No.: R01 DK54922
Principal Investigator: Youhua Liu

1998-2003 NIH Program Project: "Trauma Primes Cells - Project VII" by Alden H. Harken
Grant No.: 2 P50 GM49222
Principal Investigator: Alden H. Harken

1999-2004 NIH Research Grant: "Thermal Injury Induced Alterations in Immune Cells."
Grant No.: R01 GM58242
Principal Investigator: Martin G. Schwacha

2000-2001 Lifespan Research Grant: "Immunomodulation during Viral Infection - In Children."
Lifespan/Dept. Pediatrics/Hasbro-R.I. Hospital Supported Project.
Principal Investigator: Lesley A. Doughty

- 2005-2010 NIH-NIGMS Mentored Clinician Scientist Award: "Immunomodulation of Sepsis in Biliary Obstruction."
Grant No.: K08-GM74678
University of Michigan, Dept. Surgery
Principal Investigator: Rebecca Minter
- 2002-2006 NIH Research Grant: "A Mechanism of Liver Repair after Biliary Reconstruction."
Grant No.: R01 DK46831-06
Principal Investigator: Thomas F. Tracy, Jr.
Collaborator: Alfred Ayala
Total Support = \$1,564,869 direct and indirect cost (for 2002-2006).
- 2003-2006 NIH-Research Grant: "Francisella Tularensis: Innate Resistance to Inhalation."
Grant No.: R21-AI 55657-01
Principle Investigator: Stephen H. Gregory
Collaborator: Alfred Ayala
Total Support: \$616,000 in direct and indirect costs (for 2003-2006)
- 2006-2007 NIH-NCRR Shared Inst. Grant: "BD FACSAria Flow Cytometer."
Grant No.: S10 RR021051-01A2
Principal Investigator: Laurent Brossay
Major User/Collaborator: Alfred Ayala
Total Support Requested = \$449,100.
- 2006-2007 NIH-NCRR Shared Inst. Grant: "Nikon C1si Confocal Microscope."
Grant No.: S10 RR22512
Principal Investigator: Paul McMillan
Major User/Collaborator: Alfred Ayala
Total Support Requested = \$333,248.
- 2005-2007 Shock Society/Novo Nordisk Fellowship in Hemostasis and Shock: "Immune Hypo-responsiveness in Shock: Role of SOCS-1 and SOCS-3 Proteins."
Grant No.: Jr. Faculty Fellowship
Principal Investigator: Chun-Shiang Chung
Mentor: Alfred Ayala
Total Support = \$120,000
- 2014-2018 NIH-NIDDK Research Grant: "Histone deacetylases as novel therapeutic targets for kidney fibrosis."
Grant No.: R01 DK085065
Principal Investigator: Shougang Zhuang
Collaborator: Alfred Ayala

Total Support = \$1,431,000 in direct and indirect cost (for 2014-2018).

- 2016-2021 NIH-NHLBI Research Grant: "HDAC6 regulates cigarette smoke-induced endothelial barrier dysfunction and lung injury."
Grant No.: R01 HL130230
Principal Investigator: Qing Lu
Consultant: Alfred Ayala
Total Support = \$1,575,000 in direct and indirect cost (for 2016-2021).
- 2016-2017 Surgical Infection Society Foundation-Basic & Clinical Translational Research Fellowship award: "The impact of programmed cell death receptor-1 (PD-1) on immune dysfunction in murine neonatal sepsis."
Grant No.: Resident Basic & Clinical Translational Research Fellowship
Principal Investigator: Eleanor A. Fallon
Mentor/Sponsor: Alfred Ayala
Total Support = \$35,000 in direct and indirect cost (for 2016-2017).
- 2016-2018 American College of Surgeons-14th C. James Carrico Faculty Research Fellowship award: "Alternative RNA Splicing in Critical Illness: Gene Expression Evidence."
Grant No.: Faculty Research Fellowship
Principal Investigator: Sean F. Monaghan
Mentor/Sponsor: Alfred Ayala
Total Support = \$80,000 in direct and indirect cost (for 2016-2018).

UNIVERSITY TEACHING ROLES

at Cleveland State University:

Microbiology (Bio 417):

Spring Qtr. 1984 (30% of lectures)

Graduate Laboratory Instructor for Micro. Labs. (Bio. 417, 314); Intro-Majors Bio.

Labs. (Bio. 201,202); Development Bio. Labs.; Non-majors Intro-Bio. Lab. (Bio. 101)
1976-78 and 1980-1985.

at Michigan State University:

Graduate Immunology (MPH 851):

Fall 1993 (10% of lectures)

Spring 1995 (20% of lectures)

Preceptor Block II (year II med. students) - Problem Based Learning (HM 511, 512, 525, 526):
Fall 1993, 1994, 1995 (September)
Spring 1994 (January)

Undergraduate/Medical Student Independent Study (PHY 980; PSL 480; MPH 490)
see "Students Advised"

at Brown University/Rhode Island Hospital:

Preceptor for Surgical Residents Basic Science Conference (R.I.H.):
Oct 1996, Aug 1997, Sept 1998, Dec 2000

Lecturer: Biology 285 "Introduction to Pathobiology Research"
Nov 1999, Sept. 2000, Oct. 2007

Lecturer: Biology 152 "Innate Immunity"
Nov 2011

Advisor: Biology 195/196 "Independent Study"
Rebecca Rhee: Fall 2001
Sarah Bray: Fall 2002
Nickolas Winoski: Fall 2003/Fall 2004
Caroline Hu: Spring 2005, Fall 2005, Spring 2006
Yvonne L. Wang: Fall 2006, Spring 2007
Ana Moreno: Fall 2007, Spring 2008
Sima Patel: Fall 2009, Spring 2010
Ye Sul Kim: Fall 2009, Spring 2010, Fall 2010, Spring 2011
Eleanor Smith: Fall 2010, Spring 2011
Gabriela Garcia: Fall 2011, Spring 2012
Valarie Sanabria-Guillen: Fall 2013, Spring 2014, Fall 2014, Spring 2015
Kaitlyn Petitpas: Fall 2018, Spring 2019
Chung (Sunny) Lee: Summer 2020, Fall 2020, Spring 2021

Faculty: Biology 284 "Topics in Pathobiology: Immunopathology"
Jan.-May 2000 (responsible one-third of course content/lectures)
Jan.-May 2002 (responsible one-third of course content/lectures)

Medical Student Independent Study (Medicine 710)
see "Students Advised".

IMSD Module: "Reading Scientific Publications"
Oct-mid Nov 2008 (6 weekly 2 h sessions)
August 2010 (1 week, 3 x 2h sessions)

August 2011 (1 week, 3 x 2h sessions)
August 2012 (1 week, 3 x 2h sessions)
August 2013 (2 weeks, 2 x 2h sessions)
August 2014 (1 week, 3 x 2h sessions)
August 2015 (1 week, 3 x 2h sessions)
August 2016 (1 week, 3 x 2h sessions)
August 2017 (1 week, 3 x 2h sessions)
January 2023 (1 week, 3 x 2h sessions)

Primary Reader: Undergraduate Honors thesis project for B.S. degree.

Rebecca J. Rhee, Honors thesis project entitled: The contribution of NK-T-cells to Immune suppression seen in sepsis. May 2002

Sarah Bray (Newton), Honors thesis project entitled: Changes induced in macrophage co-stimulatory molecule expression and/or function after polymicrobial sepsis: CD86 expression and macrophage function. May 2003

Nickolas Winoski, Honors thesis project entitled: The Contribution of CD4+CD25+ T-regulatory Cells to Immune Suppression in Sepsis. May 2005

Benjamin Galen, Honors thesis project entitled: Scavenger Receptor Expression During Systemic Inflammation. May 2005

Caroline Hu, Honors thesis project entitled: Role of liver NKT-cells in the development of immune/hepatic dysfunction and injury in septic mice. May 2006.

Ana Moreno, Honors thesis project entitled: Determination of the effect of intra-peritoneal delivered caspase-12 siRNA on the development of local leukocyte activation/function during sepsis. May 2008.

Sima Patel, Honors thesis project entitled: Phenotyping PD-1 and PD-L1 in the Small Intestine of the Septic Mouse. May 2010.

Ye Sul Kim, Honors thesis project entitled: Mechanisms(s) by which signaling via PD-1 alters monocyte/macrophage migratory function during severe sepsis. May 2011.

Eleanor Smith, Honors thesis project entitled: Does the Expression of HVEM Contribute to the Alterations Seen in Innate Immune Response, Morbidity and Mortality Seen Following Sepsis? May 2011.

Valeria Sanabria Guillen: Honors thesis project entitled: The role of PD-1 in iNKT cell migration and chemokine receptor expression in polymicrobial sepsis. May 2015.

Kaitlyn Petitpas: Honors thesis project entitled: Endothelial Cell and Pericyte Interactions with Neutrophils Contributes to Pericyte Dissociation and Development of Indirect ARDS. May 2019.

Chung (Sunny) Lee: Honors thesis project entitled: The Role of Gene Expression in a Model of Hemorrhagic Shock. May 2022.

Second Reader: Undergraduate Honors thesis project for B.S. degree.

Philomena Salvemini: Honors thesis project entitled. Inter- α -inhibitor and its beneficial effects during polymicrobial sepsis. May 2000.

David Ornan: Honors thesis project entitled. Alterations in adrenomedullin receptors during polymicrobial sepsis. May 2000.

Nicole Lockhart: Honors thesis project entitled: Cytochrome P450 and lidocaine clearance during sepsis. July 1999-May 2000.

Paul Frake: Honors thesis project entitled: Pre-storage leukoreduction prevents accumulation of matrix metalloproteinases during blood storage. May 2004.

Mia Waliszewski: Honors thesis project entitled: Autocrine regulation of endothelial-derived CAP37: effect on cell viability. May 2013.

Marie Baker: Honors thesis project entitled: The Impact of the Physiological Conditions of Acute Respiratory Distress Syndrome on U1-70K Isoform Expression and Endothelial Cell Barrier Dysfunction. May 2020.

at University of Puerto Rico at Mayaguez, College of Arts & Sciences:

Preceptor/Supervisor for Practicum in Industrial Biotechnology/BIND 4905 for Arnaldo Carreira, project entitled: Determination of the extent to which PD-1 expression on CD4 T cells alters cell function during sepsis, June-July 2008

Invited PhD/MD thesis "outside" reader:

Noel F. Fanning, MB, BCh, BAO, FRCSI (Thesis supervisors: H.P. Redmond, T.G. Cotter, D. Bouchier-Hayes): MD by thesis project entitled: "Molecular mechanisms of dysregulated neutrophil apoptosis following general anesthesia, tissue trauma and

systemic inflammation”. Submitted to the Department of Surgery, National University of Ireland, University College Cork, Cork, Ireland. March 1999.

Eamon G. Kavanagh, MB, BCh, BAO, FRCSI (Thesis supervisors: H.P. Redmond, M.P. Brady, J.A. Mannick, J.A. Lederer): MD by thesis project entitled: “Effects of Injury on T-Cell Activation and Function *In Vivo*”. Submitted to the Department of Surgery, National University of Ireland, University College Cork, Cork, Ireland. February 2000.

Malcolm R. Kell, MBChB, FRCS (Thesis supervisors: H.P. Redmond, J.A. Lederer, J.A. Mannick): MD by thesis project entitled: “Injury Primes the Immune System and Augments Early T-Cell Responses”. Submitted to the Department of Surgery, National University of Ireland, University College Cork, Cork, Ireland. October 2002.

Cletus Cheyou, BS, MD (Thesis supervisors: P. Wang [Major advisor], B. Sherry, H. Wang): PhD by thesis project entitled: “Modulation of the Innate Immune Response to Ischemic Stroke: Novel Anti-Inflammatory Roles of MFG-E8 and Ghrelin”. Submitted to the Department of Surgery, Feinstein Research Inst./ Northshore-Long Island Jewish Medical System, Manhasset, NY, USA. April 2012.

Invited Vice-Supervisor PhD thesis work:

Lunxian (Kelly) Tang, M.D., M.S. (Thesis supervisor: ###): PhD by thesis project entitled: “T-regulatory cells as mediators of indirect acute lung injury”. Submitted to the Department of Medicine, East Shanghai Hospital/ Tonji University, Shanghai, P.R. China. 2014-2016.

Educational Activities:

at Michigan State University:

Organizer of Shock and Trauma Research Laboratories Journal Club, 1991-94

Contributing member, Department of Microbiology, Immunology Journal Club. 1989-95

at Rhode Island Hospital/ Brown University School of Medicine

Organizer of R.I. Hospital - Division of Surgical Research Journal Club, Spring 2001-Fall 2001

Organizer of the ‘Surgical Research Seminar Series on: Topics in Inflammation and Injury in

Critical Illness' at R.I. Hospital - Division of Surgical Research/Dept. Surgery/ Brown Univ. School of Medicine, Spring 2001-2021

Organizer of R.I. Hospital - Division of Surgical Research - Joint laboratory meetings, Spring 2002-2021.

Co-Director of NIH-NIGMS T32-GM08768 Post-doctoral training grant entitled: "Trauma-inflammation Research Training." 2004-**present**.

Students and Residents Advised/Trained:

at Michigan State University:

Julie A. Felt, B.S.: Senior Medical Student. Project: The role of endotoxin in sepsis. April-June, 1989. (Cooperatively advised with Dr. J.M. Kisala)

Daniel R. Meldrum, B.S.: Medical Student. Projects in Michigan State University Biomedical Student Research Program. Project, I title: A study of the effects of a calcium channel blocker on splenocyte function following hemorrhage. Supported by NIH Training Grant. June-September 1989. (cooperatively advised with Dr. I.H. Chaudry)
Project II title: A study of the effects of hemorrhage on lymphocyte ATP levels utilizing ³¹P-NMR. Supported by NIH Training Grant. June-August 1990. (Cooperatively advised with Dr. I.H. Chaudry)

Project III title: A study of the effects of ATP-MgCl₂ treatment on macrophage ATP levels, antigen presentation function, and IL-1, IL-6 and TNF synthesis following hemorrhage. (Supported by Edward L. Morehead II Research Award) August-September 1991. (Cooperatively advised with Dr. I.H. Chaudry)

Project IV: A study of the mechanisms of the immunoprotective effects of diltiazem following hemorrhage (a portion of this work was presented at the Shock Society's Young Investigator Award Competition, 1992)

Jennifer Knotts, M.D.: Resident Research Program: Project concerned assessing changes in splenocyte total cellular calcium concentration and lymphokine production during polymicrobial sepsis. October 1990-May 1991.

Hugh Lindsey, M.D.: Project for M.S. in Surgery, (Thesis Committee Member): Proposed studies are directed at elucidating the role of cytokines in the production of hyperoxic lung injury. July 1991-December 1993.

- Pragnesh Patel: Undergraduate independent research project (MPH 499): An investigation of the role of calcium induced mechanisms of cellular (i.e. lymphocyte) injury. June-December 1991. (Cooperatively advised with Dr. I.H. Chaudry).
- Patrick J. O'Neill, B.S.: Graduate student. Advised on studies concerning the association of IL-6 with ischemia/reperfusion injury of the bowel. January 1990-June 1993. (unofficial capacity).
- Chris R. Pierson: Undergraduate independent research project (MPH 499): An investigation of the role of interferon- γ in hemorrhagic shock and sepsis. January-June 1992. (Advisor).
- Aaron Mayberry, M.D.: Project for M.S. in Surgery (Thesis Committee member)- proposed studies are directed at elucidating the metabolic (pH, phagocytic, lysosomal, etc.) alterations which take place in macrophages following hemorrhage. July 1992-Dec 1995.
- Samuel H. Wurster, M.D.: Project for M.S. in Surgery (Thesis Committee member)- proposed studies are directed at assessing the changes induced in vascular reactivity during sepsis and what causes these changes. July 1992-July 1995.
- Zoe K. Deol, B.S.: Senior Medical Student Research Elective. Project: The role of endotoxin in multiple organ failure during polymicrobial sepsis. March 1993-January 1994.
- Ann D. Hampton: Undergraduate independent study (PSL 480). Project: Investigation of the capacity of IL-1ra to reverse the immunosuppressive effects of hemorrhage on immune function. June-August 1993.
- Robert G. Molnar, M.D.: Project for M.S. in Surgery (Thesis Committee member)- proposed study directed at assessing the role of neutrophils in the induction of hepatocellular dysfunction observed during sepsis. July 1993-December 1995.
- Yvette Vargaz: Undergraduate Independent Study (PSL 480). Project: Establish primary hepatocellular clones and hepatoma cell line for study of kupffer cells effects on hepatocytes during sepsis. September-December 1993
- Heather Childers: Undergraduate Independent Study (PSL 480). Project: Assess the role of programmed cell death (apoptosis) in the dysfunction in lymphocytic response seen following sepsis. September 1993-January 1994.
- David M. Kam, M.D.: Project for M.S. in Surgery (Thesis Committee member) - proposed study entitled: Seventy kilodalton stress protein (hsp70) gene expression in the mouse: the effect of sepsis and hemorrhage. July 1993-December 1995.

JoAnn Palma, B.S.: Project for Ph.D. in Biology (Thesis Committee member) - proposal for thesis entitled: Mechanism(s) of action of the anti-cancer drugs cisplatin and carboplatin. October 1993-January 1995.

Albert M. Morrison, M.D.: Project for M.S. in Surgery (Thesis Committee member) - proposed study directed at comparing the capacity of heparin as opposed to chemical modified heparin to restore endothelial cell nitric oxide function during sepsis. July 1994-December 1995.

John Kepros, M.D.: Project for M.S. in Surgery (thesis Committee member) - proposed study directed at determining if the salutary effects of chemically modified heparin and heparin are mediated through inhibition of TNF. July 1994-December 1995

Shariff K. Bishai: Undergraduate Independent Study (PSL 480). Project: To assess the role of programmed cell death in the dysfunction induced in hepatocytes during exposure to cytokines (TNF). September-December 1994.

Stacy A. Uebele (DPM, Hastings, MI): Undergraduate Independent Study (MPH 499). Project: To assess the effects of kupffer cell depletion (using the agent gadolinium chloride) on the systemic inflammatory cytokine response and host immunity during polymicrobial sepsis. January-April, 1995.

Marcy A. Urbanich: Undergraduate Independent Study (MPH 499): Project: To determine if polymicrobial sepsis induces apoptosis in macrophage and neutrophils. January-April 1995.

David S. Suri: Undergraduate Independent Study (PSL 480): Project: To compare the effects of low-dose endotoxin infusion to polymicrobial sepsis on the transcription of the inflammatory cytokine (TNF-a, IL-1b, IL-6, TGF-beta) genes in mouse macrophage. January-April 1995.

Amy E. Mueller: Undergraduate Independent Study (MPH 499): Project: To determine whether or not evidence of programmed cell death is present in hepatocytes isolated from the liver of septic mice. May-August 1995.

Dianne E. Sonefeld ([Gregory]-M.D., Internal Medicine, Grand Blanc, MI): Undergraduate Independent Study (MPH 499): Project: To determine whether or not evidence of altered IgA secretion is evident in B-cells isolated from the Peyer's Patches of septic mice. September-December 1995.

at the University of Rhode Island:

Joanne L. Lomas-Neira, B.S., M.S.: Project for ***Ph.D. in Cell and Molecular Biology (Major Advisor*** –thesis committee member) - project entitled: "The contributions of murine KC and MIP-2 in hemorrhage induced neutrophil priming for acute lung injury following subsequent septic challenge." September 2001-May 2006

at Brown University:

Amit R.T. Joshi, B.A.: Summer Medical Student Research Assistantship Award (summer 1998): Project: The role of NF- κ B in the onset of immune cell apoptosis subsequent to polymicrobial sepsis. February 1998-present. Medical Student Independent Study Elective (Medicine 710)- NF- κ B activation has tissue specific effects on immune cell apoptosis during polymicrobial sepsis. September 2000-January 2001.

Grace Y. Song, B.A.: Research Assistant/Medical Student: The role of IL-10 and altered signal transduction events in the induction of immune suppression in polymicrobial sepsis. January 1998- May 2002.

Medical Student Independent Study Elective (Medicine 710) - Role of p38 MAPK in the immune dysfunction seen in polymicrobial sepsis. September 2000-May 2002.

Lara Watkins: Undergraduate from Providence College/Laboratory Aide:
Project, I title: The role of MAPK in macrophage dysfunction observed following the onset of polymicrobial sepsis. March 1997- August 1998.

Project II title: Assessment of 3-aminopropanal effect on splenocyte apoptosis and/or function? September 1998-May 2000.

Project III title: Determination of the contribution of CD8 and/or γ/δ -T-cells in the induction of immune dysfunction seen septic mice. June 2000-August 2001.

Rory A. Priester, B.A.: Project Tech./Medical Student: The role PKC in the regulation of increased activation induced apoptosis encounter in sepsis. June-August 1999.

Samantha R. Mekrut: Undergraduate from Fairfield College/Laboratory Aide: SOCS protein expression in sepsis. June-August 2000.

Crystal Lane: Summer undergraduate student in the *NIH Short Term Training for Minority Students Program/ Leadership Alliance*: The contribution of CD1d regulatory T-cells to immune suppression seen in sepsis. June- August 2000.

Rebecca Rhee: Undergraduate from Brown University/Laboratory Aide: (*Mentor*- independent study/undergrad thesis). The contribution of NK-T-cells to immune suppression seen in

sepsis. (Independent study/undergrad thesis) January 2001- May 2002.

Gil Freitas: Summer undergraduate student in the *NIH Short Term Training for Minority Students Program/ Leadership Alliance*: Project: Does the immune response to tissue injury produce comparable changes in cell-signaling to that seen in sepsis. June-August 2001.

Shayla M. Toombs: Summer undergraduate student in the *NIH Short Term Training for Minority Students Program/ Leadership Alliance*: Project: Assessment of the Mode of Action of FasL mediated Septic Mortality. June-August 2002.

Sara M. Bray: Summer-Undergraduate Teaching & Research Assistantship (*Mentor-independent study/undergraduate thesis*). Project: Do alterations in co-stimulant receptors take place in septic mice and does it enhance or suppress survival of septic challenge. June 2002-June 2003

Shaun Murphy, B.S: Project for Ph.D. in Pathobiology (thesis Committee member) - project entitled: "Physiological association between IL-10 deficiency, inflammation and uterine NK cells in pregnancy outcome." June 2002-2006.

Leslie Jones: Summer undergraduate student in the *NIH Short Term Training for Minority Students Program/ Leadership Alliance*: Project 1: "Intracellular Localization of Specific Pro-/Anti-apoptotic Bcl-family Proteins (e.g., BID) in Response Death Receptor (FasL) Driven Apoptosis seen in Polymicrobial Sepsis." June-August 2003.

Project 2: "Assessment of BID gene deficiency and/or gene silencing (BID siRNA) capacity to suppress apoptosis and improve survival seen following polymicrobial sepsis". June-August 2004

Johnna Wesley, B.S: Project for Ph.D. in Pathobiology (thesis Committee member) - project entitled: "Mechanisms of V α 14 μ -NK-T-Cell Activation of NK Cells". May 2003-May 2007.

Doreen E. Wesche-Soldato, B.S.: Project for ***Ph.D. in Graduate Pathobiology Program (Major Advisor*** –thesis committee member) - project entitled: "Assessment of the capacity of anti-Fas and/or anti-FasL siRNA to reverse liver and GI morbidity and mortality seen with polymicrobial sepsis." June 2003-May 2007

Megan Garber, B.S.: Project for ***Ph.D. in Graduate Pathobiology Program (Major Advisor*** - thesis committee member) - project entitled: "The role of IL-16 in the development of immune dysfunction and apoptotic changes seen in sepsis." September 2003-2007 (received M.S.)

- Nicholas Wisnoski: Undergraduate Independent Study-Honors Thesis Prog. (*Mentor-independent study/undergraduate thesis*). Project: The contribution of CD4+CD25+ T-regulatory cells to immune suppression in sepsis. September 2003-May 2005
- Antonio Funches: Summer undergraduate student in the *NIH Short Term Training for Minority Students Program/ Leadership Alliance*: Project: "Determination of the extent $\gamma\delta$ T-cells residing in the intra-epithelial lymphoid cell compartment of the gut induced to undergo apoptosis during sepsis and the degree to this is death receptor (Fas-FasL) mediated" June-August 2005.
- Caroline Hu: Summer Student-Res. Assist. (*Mentor-independent study/undergraduate thesis*). Project: "Role of liver NK-T-cells in the development of immune/hepatic dysfunction and injury in septic mice." June 2005-August 2006.
- Yvonne Wang: Summer Student-Res. Assist. (*Mentor-independent study*). Project: "Role of CD1d+ Antigen Presenting Cells in the Development of Immune/Hepatic Dysfunction in Septic Mice." January 2006-Fall 2007.
- Summer medical student-Res. Assist. (*Mentor-independent study/PLME res.*). Project: "The role of PD-1 in Liver Non-Parenchymal cells on the induction of liver inflammation/damage during sepsis." June 2008-May 2011.
- Leia L. Foster: Summer undergraduate student in the *NIH Short Term Training for Minority Students Program/ Leadership Alliance*: Project: "Assessment of cross-linked strept-avidin/protamine's capacity to serve in targeted siRNA delivery" June-August 2006.
- Sam McNeal, B.S.: Project for ***Ph.D. in Graduate Pathobiology Program*** (*Major Advisor* - thesis committee member) - project entitled: "The role of RIP1 in hepatocyte induced apoptotic/non-apoptotic cell cytotoxicity seen in sepsis." September 2006-August 2012
- Earl Campbell, III: Summer undergraduate student in the *NIH Short Term Training for Minority Students Program/ Leadership Alliance*: Project: "Assessment of the effect of caspase 12 gene silencing on septic morbidity" June-August 2007.
- Ana Moreno: Undergrad. Honors thesis (*Mentor-independent study/undergraduate thesis*). Project: "Determination of the Effect of Intra-peritoneally Delivered Caspase-12 siRNA to the Development of not only Local Leukocyte Activation/Apoptosis but Overall Mortality during Sepsis." September 2007-May 2008.
- Pamela J. Gaddi, B.S: Project for Ph.D. in Pathobiology (thesis Committee member) - project entitled: "Role of IL-10 in the regulation of acute cytomegalovirus infection". September 2007-November 2011.

Douglas C. Wilson, B.S.: Project for Ph.D. in Pathobiology (thesis Committee member) - project entitled: "IL-12 signaling drives CD8 T cell IFN-gamma production and effector sub-population differentiation during *Toxoplasma gondii* infection". September 2007-May 2010.

Courtnei Newsome, B.S.: Project for Ph.D. in Pathobiology (thesis Committee member) - project entitled: "Characterization of the effects of beta-glucan on the septic mouse immune response". May 2008-May 2010 (Co-sponsor F31 application-*funded*).

Tani Nevers, B.S.: Project for Ph.D. in Pathobiology (thesis Committee member) - project entitled: "Characterization of CXCL9 and CXCL10 on CD8+ T cell effector functions during murine cytomegalovirus infection". May 2008-December 2011.

Arnaldo Carreira: Summer undergraduate student in the *NIH Short Term Training for Minority Students Program/ Leadership Alliance*: Project: "PD-1 gene deficiency suppresses sepsis induced increase in macrophage migratory capacity", June-August 2008.

Emma Reilly, B.S.: Project for Ph.D. in Pathobiology (thesis Committee member) - project entitled: "Understanding the Roles of CD1d Regulation and Type II NKT cells During MCMV Infection ". July 2008-December 2012.

Victoria Ruiz, B.S.: Project for Ph.D. in Pathobiology (thesis Committee member) - project entitled: "*H. Pylori* infection and manipulation of the host immune response." July 2008-March 2012. (Co-sponsor F31 application-*funded*)

Noelle Hutchins, B.S.: Project for **Ph.D. in Graduate Pathobiology Program** (*Major Advisor* - thesis committee member) - project entitled: "Fatal Attraction: T lymphocytes and liver endothelial cells during sepsis.". June 2008-May 2013 (Sponsor/Mentor F31 application-*funded*)

Sadella Santos: Summer undergraduate student in the *NIH Short Term Training for Minority Students Program/ Leadership Alliance*: Project: "PD-1 gene deficiency suppresses sepsis induced increase in lymphocyte migratory capacity", June-August 2009.

Sima Patel: Summer student/UTRA-res. assist. (*Mentor-independent study*). Project: "The Role of PD-1:PD-L1/L2 in the Induction of Small Intestine Inflammation during Sepsis." June 2009-May 2010.

Nicholas Carter: Summer medical student res. experience (*Co-mentored with Dr. Joanne Lomas-Neira*). Project: "The role of pulmonary endothelial cell (EC) growth factor, Angiopoietin-2 (*Ang-2*), in the development of hemorrhage/sepsis associated (indirect) ALI in mice." June-August 2009.

Nicholas Shubin, B.S.: Project for **Ph.D. in Graduate Pathobiology Program** (*Major Advisor* -

- thesis committee member) - project entitled: "The role B- and T-lymphocyte attenuators in the development of septic morbidity/mortality.", June 2009-June 2012.
- Ye Sul Kim: Undergraduate independent study (*Mentor-independent study*). Project: "Does the expression of Programmed Cell Death Receptor (PD)-1 contribute to changes in macrophage migratory function seen during sepsis via cytoskeletal alterations?" September 2009-May 2011.
- Caroline C. Duwaerts, B.S: Project for Ph.D. in Pathobiology (thesis Committee member) - entitled: "Role iNKT Cells in Cholestatic Liver Injury", January 2010-January 2013.
- Chathuraka Jayasuriya, B.S: Project for Ph.D. in Pathobiology (thesis Committee member-chair.) - entitled: "Regulation of IL-1 signaling by extracellular matrix protein matrilin-3", January 2010-April 2013.
- Eleanor Smith: Undergraduate independent study (*Mentor-independent study*). Project: "Does the expression of HVEM contribute to alterations seen in innate immune response, morbidity and mortality seen following sepsis?" September 2009-May 2011.
- Joshua Borgerding: Summer undergraduate student in the *NIH Short Term Training for Minority Students Program/ Leadership Alliance*: Project: "Assessment of PD-1 and Fas expression on liver sinusoidal endothelial cells during sepsis", June-August 2010.
- Cyrena Gawuga, B.A: Project for Ph.D. in Dept. Mol. Pharm., Physiol. & Biotech., (thesis Committee member) – project entitled: "The psychoneuroimmunology of stress: mechanism of the pro-inflammatory response to stressful experiences and its role in the development of clinical disorders." July 2010-January 2016.
- Shivana Maharaj: Summer undergraduate student in the *NIH Short Term Training for Minority Students Program/ Leadership Alliance*: Project: "Assessment of RIP1 function and its ubiquitination on hepatocytes during sepsis", June-August 2011.
- Gabriela Garcia: Undergraduate independent study (*Mentor-independent study*). Project: "Comparison monocyte vs. T-cell deficiency of SHP-2 on the morbidity and mortality seen following sepsis?" September 2011-May 2012.
- Walter Anazonwu, B.A.: Summer medical student-res. assist. (*Mentor-independent study/PLME res.*). Project: "Identifying soluble forms of the co-inhibitory receptor BTLA and its ligand HVEM in septic mice & critically ill patients." June 2012-September 2012
- Bethany Biron, B.S., M.S.: Project for ***Ph.D. in Graduate Pathobiology Program (Major Advisor*** - thesis committee member) - project entitled: "The role of neutrophil extra-cellular Traps in the morbidity/mortality seen with polymicrobial sepsis." June 2013-May 2017.

- Onyemacchi Nwananji-Enwerem: Summer undergraduate student in the *NIH Short Term Training for Minority Students Program/ Leadership Alliance*: Project: “Soluble co-inhibitory receptors, B-/T-lymphocyte attenuator (BTLA), and its ligand, hepatitis virus entry mediator (HVEM) and their biological significance septic mice”, June-August 2013.
- Valeria Sanabria Guillen: Undergraduate independent study (*Mentor-independent study*). Project: “The role of PD-1 in iNKT cell migration and chemokine receptor expression in polymicrobial sepsis.” September 2013-May 2015.
- Santiago Pulidos: Summer undergraduate student in the *NIH Short Term Training for Minority Students Program/ Leadership Alliance*: Project: “Neutrophil Extracellular Traps (NETs) role in septic Morbidity”, June-August 2014.
- Eboni Chambers, B.S: Project for Ph.D. in Pathobiology (thesis Committee member; Chair.) - entitled: "ARDS: The Impact of Acute Exposure to Cigarette Smoke, Adenosine and Pulmonary Endothelial Cells", September 2014-May 2018.
- Craig Erikson, B.S.: Project for Medical Student Fellow: “Sepsis in murine neonates is characterized by profound and near-exclusive neutrophil and macrophage infiltration in the peritoneum that is partially suppressed by intraperitoneal blockade of the HVEM:LIGHT axis.”, November 2014-October 2015.
- Yun (Ryan) Xu, B.S: Project for Ph.D. in Pathobiology (thesis Committee member) - entitled: “Impact of influenza virus/ *L. pneumophila* co-infection on lung endothelial cells”, March 2015- May 2018.
- Erlyana Clarke: Summer undergraduate student in the *NIH Short Term Training for Minority Students Program/ Leadership Alliance*: Project: “Do Type 2-Innate Lymphoid Cells (ILC2) Have a Role in Septic Organ Injury?” June-August 2015.
- Marilyn Le, B.S., M.S.: Project for **M.S. in Graduate Program of Dept. Mol. Pharm., Physiol. & Biotech.** (*Major Advisor* - thesis committee member) - project entitled: “The role of PD-L2 in the morbidity/mortality seen with polymicrobial sepsis.” June 2015-May 2017.
- Yun Gao, B.S: Project for Ph.D. in Pathobiology (thesis Committee member) - entitled: “The role of miR-365 in injury-induced osteoarthritis”, September 2015-May 2018.
- Mayara Grizotte-Lake, B.S: Project for Ph.D. in Pathobiology (thesis Committee member) - entitled: “Regulation of mucosal immune response by gut microbiota”, April 2016-May 2020.

Chyna Gray: Summer undergraduate student in the *NIH Short Term Training for Minority Students Program/ Leadership Alliance*: Project: “The Role of invariant Natural Killer (iNK) T- cells in Neonatal Sepsis.” June-August 2016.

Project for **Ph.D. in Graduate Program in Molecular Biology, Cell biology and Biochemistry (MCB)** (*Major Advisor* - thesis committee member) - project entitled: “The role of the “check point” protein, V-domain Ig Suppressor of T Cell Activation (VISTA), in polymicrobial sepsis produce in mice and as seen in humans.” June 2018-May 2023.

Jessica Tolbert: Summer undergraduate student in the *NIH Short Term Training for Minority Students Program/ Leadership Alliance*: Project: “The impacts of polymicrobial sepsis on the expression of the “check point” protein V-domain Ig Suppressor of T Cell Activation (VISTA) in mice and its potential role therein.” June-August 2017.

Myles Bartholomew: Summer undergraduate student in the *NIH Short Term Training for Minority Students Program/ Leadership Alliance*: Project: “Comparison monocyte vs. T-cell deficiency of SHP-1 on the morbidity and mortality seen following sepsis?” June-August 2018.

Kaitlyn Petitpas: Undergraduate independent study (*Mentor-independent study/Undergraduate Honors Thesis*). Project: “Endothelial Cell and Pericyte Interactions with Neutrophils Contributes to Pericyte Dissociation and Development of Indirect ARDS.” September 2018-May 2019.

Brandon Armstead, B.S., M.S.: Project for **Ph.D. in Graduate Pathobiology Program** (*Major Advisor* - thesis committee member) - project entitled: “Decrypting the etiology/treatment of pre-disposition to developing ARDS: Unique roles of checkpoint proteins.” June 2019-June 2024.

Yael Quiles-Rameriz: Summer undergraduate student in the *NIH Short Term Training for Minority Students Program/ Leadership Alliance*: Project: “Contribution of Negative Checkpoint Regulator, VISTA, to Inflammatory Response and Survival in Murine Sepsis” June-August 2019.

Destiny Arnold: Summer undergraduate student in the *NIH Short Term Training for Minority Students Program/ Leadership Alliance*: Project: “Contribution of SHP-1 Signaling to Sepsis-Induced Changes in Macrophage Function” June-August 2019.

Amanda Elyssa Ruiz, B.A: Project for Ph.D. in Pathobiology (thesis Committee member; chair.) - entitled: "Whole proteome differential screening for the identification of novel *Schistosomiasis japonica* vaccine candidates", September 2019- May 2024.

Ezequiel Cruz-Rosa: Summer undergraduate student in the *NIH Short Term Training for Minority Students Program/ Leadership Alliance*: Project: “Shock induced changes in the

transcriptomic profiles of pulmonary immune/ non-immune cells & how they are altered by checkpoint protein expression.” June-August 2020.

Alisa Oakes, B.A: Project for Ph.D. in Brown Univ. Therapeutic Science Graduate Program (previously: Dept. of Molecular Pharmacology and Physiology- graduate program) (thesis Committee member) - entitled: "Role of complement and modify cancer therapeutic efficacy.", March 2021- June 2024.

John Davies: Summer undergraduate student in the *NIH Short Term Training for Minority Students Program/ Leadership Alliance*: Project: “VISTA impact on T_{reg}-cell function: Uncovering nuances in the Septic immune response” June-August 2021.

Chung ‘Sunny’ Lee: Brown University-undergraduate. Independent study, UTRA recipient (summer 2021) and Undergraduate Honors Thesis (completed spring 2022) (*Mentor-independent study*); Project: “The comparative pre-dispositional roles of VISTA and PD-1: PD-L1 in the development of indirect-ARDS seen after shock/sepsis.” October 2020-May 2022.

Denise Danielle Tamesis: Brown University-undergraduate in PLME program. Independent study and UTRA recipient (summer 2021); Project: “The comparative roles of VISTA and PD-1:PD-L1 in the development of organ injury seen after neonatal sepsis.” June 2021-May 2022.

Habesha ‘Fasika’ Petros: Brown University-undergraduate/Biotechnology M.S. program. SPRINT/ UTRA recipient (spring 2022); Project: “Epigenetic burden(s) of neonatal sepsis: impact on acute (mature adult) and/or chronic/transgenerational lung injury/stress response.” January 2022-May 2022.

Project for *M.S. in Graduate Program in Biotechnology*. (*Major Advisor* - thesis committee member) - Project: “Investigating the Role of V-Immunoglobulin Suppressor of T Cells (VISTA) in the Morbidity and Mortality of Neonatal Sepsis Using a Mouse Model” June 2022-May 2023.

Alina Yang, B.S.: Project for Ph.D. in Pathobiology (thesis Committee member) - entitled: "Anti-viral activities of phospholipid scramblase 1(Plser1) in influenza A virus (IAV) infection", January 2022-**present**.

Erin Skeens, B.S.: Project for Ph.D. in Graduate Program in Molecular Biology, Cell biology and Biochemistry (MCB) (thesis Committee member) - entitled: "Investigating the allosteric mechanism that mediate the non-overlapping functions of MIF", January 2022-**present**.

Priscilla ‘Mickey’ Appiah: Summer undergraduate student in the *NIH Short Term Training for Minority Students Program/ Leadership Alliance*: Project: “Assessing the Post-shock

Circulating Inflammatory Milieu as it Pertains to Immune/Non-immune Priming Prior to Acute Lung Injury”, June-August 2022.

Noelle Curtis-Jones, B.S., M.S.: Project for Ph.D. in Graduate Program in Molecular Biology, Cell Biology and Biochemistry (MCB) (thesis Committee member) - entitled: "Selective Microbiome Modulation to Identify Microbial Contributors of Obesity", February 2023-**present**.

Mary Flordelys Avila, B.S., M.S.: Project for Ph.D. in Pathobiology (thesis Committee member; Chair.) - entitled: "The role of perisynaptic Schwann cell (PSC) secreted factors on neuromuscular junction (NMJ) and muscle aging.", March 2023-**present**.

Shade Rodriquez, B.A.: Project for Ph.D. in Pathobiology (thesis Committee member; Chair.) - entitled: "The engineering of neutrophils to enhance their ability to eradicate the multidrug resistant *S. aureus*.", March 2023-**present**.

Adriana Ramirez Marrero: Summer undergraduate student in the *NIH Short Term Training for Minority Students Program/ Leadership Alliance*: Project: “VISTA expression regulates neutrophil abundance in murine sepsis.”, June-August 2023.

Fernando Gutierrez Garcia, B.S., M.S.: Project for **Ph.D. in Graduate Pathobiology Program** (***Major Advisor*** - thesis committee member) - project entitled: “Macrophage VISTA Interaction in Acute Lung Injury.” June 2023-**present**.

Matthew Kwasnik, B.S.: Project for Medical Student Summer Project: “Survival and Pulmonary injury in neonatal septic challenge: VISTA.”, June 2024-**present**.

Brittnay Durham: Summer undergraduate student in the *NIH Short Term Training for Minority Students Program/ Leadership Alliance*: Project: “VISTA’s role in shock/sepsis-induced changes in bone marrow macrophage phenotype/function.”, June-August 2024.

Joanna Renedo: Brown University-undergraduate. Independent study (*Mentor*-independent study); Project: “VISTA: Macrophage Reprogramming as a Treatment for Immune Dysfunction.” January 2024-**present**.

Jai Singh: Brown University-undergraduate. (*Mentor*); Project: “VISTA-induced morphological changes on the septic mouse lung.” January 2024-**present**.

Post-Doctoral Fellows/Research Associates Trained:

at Brown University/Rhode Island Hospital:

Todd E. Williams, M.D.: Resident Research fellow, Project: Regulation of inducible cell death (apoptosis) in septic mouse macrophage. February 1996-July 1996.

Chun-Shiang Chung, Ph.D.: Post-doctoral Fellow: Attached to NIH GM53209, project entitled: Programmed Cell Death -- Role in Septic Immune Suppression. January 1997-June 2002.

Elena V. Cahoon, M.D.: Post-doctoral Fellow: Attached to NIH GM46354, project entitled: Differential Effects of Sepsis on Macrophage Function. January 2000-February 2001.

Patricia S. Grutkoski, Ph.D.: Post-Doctoral Fellow: Co-advised with Dr. H. Hank Simms and attached to NIH GM53114, project entitled: Hypoxemia/reoxygenation and cytokine - PMN interactions. October 2000-June 2002.

Yanli Ding, D.D.S., Ph.D.: Post-Doctoral Fellow: Attached to NIH GM46354, project entitled: Differential effects of sepsis on macrophage function. February 2002-April 2003.

Mario Perl, M.D.: Post-Doctoral Fellow: Attached to NIH HL73525, project entitled: Regulatory Mechanisms of Acute Lung Injury: Phagocyte Apoptosis." April 2004-June 2006.

Xin Huang, M.D., Ph.D.: Post-Doctoral Fellow: Attached to NIH GM46354, project entitled: Differential effects of sepsis on macrophage function. September 2004-2011.

Ryan Swan, M.D., Resident-NIH T32-Training Grant Fellow: Attached to NIH GM53209, project entitled: Programmed Cell Death -- Role in Septic Immune Suppression. June 2005-June 2007.

Joanne L. Lomas-Neira, M.S., Ph.D.: Post-Doctoral Fellow: Attached to NIH HL63898, project entitled: Regulatory Mechanisms of Acute Lung Injury: Phagocyte Apoptosis." May 2006- June 2009.

Brian Horner, D.O.: Resident (Pulmonary) Training Fellow (co-directed/supervised with Nicholas Ward, M.D.): Attached to Lilly-Activated Protein C Project & NIH GM46354, project entitled: "Differential effects of sepsis on macrophage function." July 2006-2007.

Fabienne Venet, PharmD., M.S., Ph.D.: Post-Doctoral Fellow: Attached to NIH HL73525, project entitled: "Regulatory Mechanisms of Acute Lung Injury: Phagocyte Apoptosis." & NIH GM46354, project entitled: "Differential effects of sepsis on macrophage function." October 2006-November 2008.

Gwendolyn F. Elphick, M.S., Ph.D.: Post-Doctoral Fellow: Attached to NIH GM46354, project entitled: Differential effects of sepsis on macrophage function. July 2007- December 2009.

Rajan Thakkar, M.D., Resident-Versaci Award Fellow: Attached to NIH HL73525, project entitled: "Regulatory Mechanisms of Acute Lung Injury: Phagocyte Apoptosis.". July 2008 - June 2010.

Sean Monaghan, M.D., Resident-Versaci Award Fellow: Attached to NIH HL73525, project entitled: "PD-1 role in Monocyte/Macrophage and/or T-cell dysfunction encountered following traumatic injury and shock." July 2009-June 2011.

Maude L. Kettenmann, M.D., Resident-Versaci Award Fellow: Attached to NIH GM46354, project entitled: "Does the expression of HVEM contribute to alterations seen the innate immune response, morbidity and mortality seen following sepsis." July 2011-June 2013.

Fei Wang, M.D., M.S. Visiting Research Fellow-China Scholarship Council (Scholarship No. 2011658019). Attached to NIH GM46354, project entitled: "Novel co-inhibitory molecule receptor (PD-1) interactions during sepsis: beyond binding of PD-Ls" January 2012-March 2013.

John Young, M.D., Resident-Versaci Award Fellow: Attached to NIH GM46354, project entitled: "ITIM Receptor Family Regulatory Mechanisms in Shock/ Trauma." July 2012-June 2014.

Youping Wu, M.D., M.S. Visiting Research Fellow-China Scholarship Council (Scholarship No. 201206580006): Attached to NIH GM46354, project entitled: "Novel co-inhibitory molecule receptor (PD-1) interactions in the gastro-intestinal track during sepsis: beyond binding of PD-Ls" January 2013-February 2014.

Noelle Hutchins, M.S., Ph.D.: NIH T32-Training Grant Fellow (co-mentored with Jonathan Reichner): Attached to NIH GM53209, project entitled: Programmed Cell Death-Role in Septic Immune Suppression. Project entitled: "Do Type 2 Innate Lymphoid Cells Have a Role in Septic Liver Injury?" June 2013-June 2014.

Whitney Young, M.D., Resident-Versaci Award Fellow: Attached to NIH GM46354, project entitled: "The expression/role/significance of PD-L1 expression (a co-inhibitory molecule ligand) on hepatocytes and in septic liver morbidity." July 2013-June 2015.

Tianzhu Tao, M.D., M.S. Visiting Research Fellow-China Scholarship Council (Scholarship No. 201306580023): Attached to NIH GM46354, project entitled: "Determine whether B7-H1/PD-1 gene deficiency affects the macrophage activation of TLR pathways". January 2013-February 2015.

Tristen Chun, M.D., Resident-Versaci Award Fellow: Attached to NIH GM46354, project entitled: "Do Type 2-Innate Lymphoid Cells (ILC2) Have a Role in Septic Gastrointestinal Injury?" July 2014- June 2016.

Anne-Lise Rossi, M.S., Ph.D.: Post-Doctoral Fellow: Attached to NIH GM107149, project entitled: "Co-Inhibitory molecules and the Pathology of Indirect Acute Lung Injury." & NIH GM-046354, project entitled: "Differential effects of sepsis on macrophage function." October 2014- August 2016.

Eleanor A. Fallon, M.D., Resident-Versaci Award Fellow: Attached to NIH GM46354 and also a recipient of a *SIS Foundation-Basic & Clinical Translational Research Fellowship award*), project entitled: "The impact of Programmed Cell Death Receptor-1 (PD-1) on immune dysfunction in neonatal sepsis?" July 2015-June 2018.

Bethany Biron-Girard, M.S., Ph.D.: NIH BR RTP T32 NRSA Post-Doctoral Fellow: Attached to NIH GM118097, project entitled: "What is the Comparative Role of Leukocyte Checkpoint Proteins/ligands Upregulation in the Development of Indirect Acute Lung Injury?" June 2017-January 2018.

Michelle Wakeley, M.D., Resident NIH T32-Training Grant Fellow: Attached to NIH GM118097, project entitled: "The Role of Herpes Virus Entry Mediator (HVEM) in the Immune Response to Sepsis and Trauma." July 2019-July 2020.

Resident-Versaci Award Fellow: Attached to NIH GM118097, project entitled: "The Role of Herpes Virus Entry Mediator (HVEM) in the Immune Response to Sepsis and Trauma." July 2018-June 2019.

Elizabeth Tindal, M.D., M.P.H., Resident NIH T32-Training Grant Fellow: Attached to NIH GM118097, project entitled: "Patho-mechanisms of sepsis: What is the respective contribution of select immune/ non-immune cells expression of PD-1 or PD-L1 to sepsis-induced morbidity/mortality?" July 2019-June 2021.

Emily Hensler, M.D., Resident NIH T32-Training Grant Fellow: Attached to NIH GM118097, project entitled: "The Role of V-domain Ig-containing Suppressor of T cell Activation (VISTA) in the Immune Response to Neonatal Septic Challenge." July 2020-June 2022.

Chyna C. Gray-Lovell, Ph.D. (co-mentored with Dr. Craig Lefort), Post-doctoral NIH T32-Training Grant Fellow: Attached to NIH R35 GM118097, project entitled: "Uncovering the Role of Negative Checkpoint Protein, VISTA, in Treg-mediated Tissue Protection and Survival in Murine Sepsis." July 2023-August 2024.

Brandon E. Armstead, Ph.D. (co-mentored with Dr. Sean Monaghan), Post-doctoral NIH T32-Training Grant Fellow: Attached to NIH R35 GM142638, project entitled: "Leveraging Deep RNA Sequencing Data for Early-Identification of Bacterial Infection in Patients Diagnosed with Sepsis." July 2024-**Present**.

Faculty Mentor/Sponsor/Committee member (for NIH-K series awards; NIH-COBRE Jr. Fac. or Pilot Proj.; Early Career Fellowships, etc.):

Lesley A. Doughty, M.D., Assistant Professor - Department of Pediatrics and Division of Surgical Res./Department of Surgery, R.I. Hospital/Brown University School of Medicine, Providence, RI, June 2004-2005. (Received: *NIH-KO8 awardee & C.M. Hood Grt. [my role: mentor/sponsor]*)

Presently: Associate Professor, Department of Pediatrics, Univ. Cincinnati School of Medicine, Cincinnati Children's Hospital, Cincinnati, OH

Chun-Shiang Chung, Ph.D.: Instructor (Research)- Department of Surgery, Division of Surg. Res., R.I. Hospital/Brown University School of Medicine, Providence, RI, July 2003-2005. (Received: *Shock Society/Novo Nordisk-New Investigator Fellowship & Rhode Island Foundation [my role: mentor/sponsor]*; Applied for: *Amer. Heart Assoc.-Independent Scientist Award; NIH-ROI applications*)

Presently: Assistant Professor (Research)- Department of Surgery, Division of Surg. Res., R.I. Hospital/Brown University School of Medicine, Providence, RI, July 2005-**present**.

Daithi Heffernan, M.D., Assistant Professor - Division of Surgical Res./Department of Surgery, R.I. Hospital/Brown University School of Medicine, Providence, RI, January 2008-2015. (Received: *Shock Society's-early career researcher award [my role: sponsor] 2011-12*; Received: *KO8 awardee [my role: KO8 Co-mentor/sponsor]*).

Presently: Associate Professor - Division of Surgical Res./Department of Surgery, R.I. Hospital/Brown University School of Medicine, Providence, RI, July 2015-**present**.

Joanne Lomas-Neira, Ph.D., Instructor of Surgery (Research)- Division of Surgical Res./ Department of Surgery, R.I. Hospital/Brown University School of Medicine, Providence, RI, January 2009- January 2013.

Assistant Professor of Surgery (Research)- Division of Surgical Res./ Department of Surgery, R.I. Hospital/Brown University School of Medicine, Providence, RI, January 2013-October 2018, (Received: *Rhode Island Foundation 2010; Surgical Infections Society's-Jr. Faculty Fellowship Award 2011 [my role: mentor/ sponsor]*; Received: *NIH CVPB-COBRE: Principle/Jr. Investigator on Project #2 entitled: The roles of angiopoietins 1 and 2 in endothelial and neutrophil activation in the development of Acute Lung Injury, 2013-2018 [my role: Co-mentor]*).

Assistant Professor, Dept. Biol. & Biomed. Sci., Salve Regina University, Newport, RI, August 2022- May 2024**present**.

Presently: Assistant Clinical Professor, Dept. Biology, Providence College, Providence, RI, July 2024-**present**.

Xin Huang, M.D., Ph.D.: Instructor of Surgery (Research) - Division of Surgical Res./ Department of Surgery, R.I. Hospital/Brown University School of Medicine, Providence, RI, January 2011-2014.

Steven C. Katz, M.D., Assistant Professor - Department of Surgery, Roger Williams Hospital-Providence / Boston University School of Medicine, Boston, MA, June 2011-2015.

(Received: *KO8 awardee [my role: KO8 comm. member]*).

Presently: Associate Professor - Division of Surgical Res./Department of Surgery, R.I. Hospital/Brown University School of Medicine, Providence, RI, July 2015-**present**.

Jianwen (Jen) Bai, M.D., Ph.D.: Visiting Scholar in Surgery (Research) - Division of Surgical Research/ Department of Surgery, R.I. Hospital/Brown University School of Medicine, Providence, RI, January 2012-June 2012.

Lunxian (Kelly) Tang, M.D., M.S.: Visiting Scholar in Surgery (Research) - Division of Surgical Research/ Department of Surgery, R.I. Hospital/Brown University School of Medicine, Providence, RI, November 2012- January 2014 (*my role: Sponsor/Mentor*).

Tingting (Tracey) Cheng, M.D., M.S.: Visiting Scholar in Surgery (Research) - Division of Surgical Research/ Department of Surgery, R.I. Hospital/Brown University School of Medicine, Providence, RI, November 2013- January 2015 (*my role: Sponsor/Mentor*).

Qing Lu, D.V.M., Ph.D., Assistant Professor of Medicine - Ocean State Res. Inst./ Department of Medicine, V.A. Med. Ctr./Brown University School of Medicine, Providence, RI, October 2013-2017. (Received: *NIH CVPB-COBRE: Invest. Project #1, 2013-2017 [my role: Mentor]*)

Presently: Program Officer, Division of Lung Diseases, NIH-NHLBI, Bethesda, MD, February 2020-**present**.

Amanda M. Jamieson, Ph.D., Assistant Professor of Molecular Microbiology and Immunology - Department of Molecular Microbiology and Immunology, Brown University School of Medicine, Providence, RI, October 2013-January 2015. (Received: *NIH CVPB-COBRE: Invest. Pilot Project, 2013-2015 [my role: Sponsor/Mentor]*)

Presently: Associate Professor – Department of Molecular Microbiology & Immunology, Brown University School of Medicine, Providence, RI, July 2021-**present**.

Shumin Xu, M.D., M.S.: Visiting Scholar in Surgery (Research) - Division of Surgical Research/ Department of Surgery, R.I. Hospital/Brown University School of Medicine, Providence, RI, November 2014-2015 (*my role: Sponsor/Mentor*).

Sean Monaghan, M.D., Assistant Professor - Division of Surgical Res./Department of Surgery, R.I. Hospital/Brown University School of Medicine, Providence, RI, July 2015-2023. (Received: *Dean's Award-Brown Univ. [my role: co-sponsor]*; *14th C. James Carrico Faculty Research Fellowship award-Amer. Coll. Surg. [my role sponsor]*; Received: *NIH CVPB-COBRE: Invest. Pilot Project, 2017-2018 [my role: Sponsor/Mentor]*; Received: *NIH CVPB-COBRE: Principle/Jr. Investigator on Project entitled: The Role of Alternative RNA Splicing in Endothelial Cell Barrier Dysfunction in Acute Respiratory*

Distress Syndrome, 2018-2021 [*my role: Sponsor/Mentor*]; Received: NIH-NIGMS MIRA 2021-2026. [*my role: consultant*]; Applied for DoD grant 2024-2028 & NIH U19 2024-2029).

Presently: Associate Professor - Division of Surgical Res./Department of Surgery, R.I. Hospital/Brown University School of Medicine, Providence, RI, July 2023-**present**.

Jiali (Amber) Zhu, M.D., M.S.: Visiting Scholar in Surgery (Research) - Division of Surgical Research/ Department of Surgery, R.I. Hospital/Brown University School of Medicine, Providence, RI, December 2015-June 2016 (*my role: Sponsor/Co-mentor*).

Qian (Amy) Yang, M.D., M.S.: Visiting Scholar in Surgery (Research) - Division of Surgical Research/ Department of Surgery, R.I. Hospital/Brown University School of Medicine, Providence, RI, January 2016-February 2017 (*my role: Sponsor/Mentor*).

Rajan Thakkar, M.D., Assistant Professor - Center for Pediatric Trauma Research/ Pediatric Surgery/ Department of Surgery, Nationwide Children's Hospital/The Ohio State University School of Medicine, Columbus, OH, 2015. (Received: K08 awardee [*my role: K08 comm. member*]; NIH-NIGMS MIRA 2023-2028. [*my role: consultant*]).
Presently: Associate Professor - Center for Pediatric Trauma Research/ Pediatric Surgery/ Department of Surgery, Nationwide Children's Hospital/The Ohio State University School of Medicine, Columbus, OH, 2017-**present**.

Baoji Hu, M.D., M.S.: Visiting Scholar in Surgery (Research) - Division of Surgical Research/ Department of Surgery, R.I. Hospital/Brown University School of Medicine, Providence, RI, June 2018-June 2019 (*my role: Sponsor/Mentor*).

Jihong Jiang, M.D., M.S.: Visiting Scholar in Surgery (Research) - Division of Surgical Research/ Department of Surgery, R.I. Hospital/Brown University School of Medicine, Providence, RI, August 2018-July 2019 (*my role: Sponsor/Mentor*).

Trainees Who Have Advanced to Faculty Positions:

Chun-Shiang Chung, Ph.D.: Assistant Professor (Research) - Department of Surgery, Division of Surg. Res., R.I. Hospital/Brown University School of Medicine, Providence, RI; June 2004-**present**.

Instructor of Surgery (Research)- Department of Surgery, Division of Surg. Res., R.I. Hospital/Brown University School of Medicine, Providence, RI, June 2002-2004

Patricia S. Grutkoski, Ph.D.: Instructor- Department of Surgery, Division of Surg. Res., R.I. Hospital/ Brown University School of Medicine, Providence, RI, June 2002-2003.

Lesley A. Doughty, M.D., Professor - Department of Pediatrics and Division of

Surgical Res., Children's Hospital at the University of Cincinnati, Cincinnati, OH,
February 2005-**present**.

Mario Perl, M.D., Professor & Dr. Med., Trauma Surgeon/ Orthopedic, Klinikdirektor at
Unfallchirurgische Klinik - Orthopädische Chirurgie, Universitätsklinikum Erlangen,
Erlangen, Germany. 2019-**present**.

Professor & Dr. Med., Trauma Surgeon/ Orthopedic Trauma, BG-Trauma Center
Murnau, Murnau, Germany. 2012-2019.

Assistant Professor to full Professor & Dr. Med., Trauma Surgery at Universitätsklinikum
Ulm (University Hospital Ulm)- Albert Einstein Medical College at University of Ulm,
Ulm, Germany. June 2006-2012.

Fabienne Venet, PharmD., M.S., Ph.D.: Professor of Immunology & Maitre de Conférences -
Praticien Hospitalier Laboratoire d'Immunologie - Claude Bernard Lyon 1 University --
Hôpital Neurologique, Lyon, France, December 2012-**present**.

Research Fellow - Flow Cytometry Unit / Immunology Laboratory, Hôpital
Neurologique, Lyon, France, December 2008-2012.

Joanne Lomas-Neira, Ph.D., Assistant Clinical Professor, Dept. Biology, Providence College,
Providence, RI, July 2024-**present**.

Assistant Professor, Dept. Biol. & Biomed. Sci., Salve Regina University, Newport, RI,
August 2022- May 2024.

Adjunct Instructor, Dept. Biol. & Biomed. Sci., Salve Regina University, Newport, RI,
August 2018-2022

Adjunct Instructor, Dept. Biol. & Biomed. Sci., Comm. Col. R.I., Lincoln, RI, August
2018-2020.

Assistant Professor of Surgery (Research) - Division of Surgical Res./ Department of
Surgery, R.I. Hospital/Brown University School of Medicine, Providence, RI, January
2013-2019 (Received: *NIH CVPB-COBRE: Invest. Project #2 award, 2013-2018*).

Instructor of Surgery (Research) - Division of Surgical Res./ Department of Surgery, R.I.
Hospital/Brown University School of Medicine, Providence, RI, January 2009-2013.

Ryan Z. Swan, M.D., F.A.C.S., Attending Hepatobiliary Surgeon, Dyson Center for Cancer Care
at Vassar Brothers Medical Center, Poughkeepsie, NY, March 2016-**present**.

Assistant Professor of Surgery, University of North Carolina - School of Medicine;
Surgical Oncology Attending-Dept. Surgery, Carolina's Medical Center, Charlotte, NC,
June 2011-2016.

Doreen Szollosi (maiden name: Wesche-Soldato), Ph.D., Associate Professor of Pharmaceutical
Sciences with tenure, School of Pharmacy, St. Joseph's College, Hartford, CT, January
2017-**present**.

Assistant Professor of Pharmaceutical Sciences, School of Pharmacy, St. Joseph's
College, Hartford, CT, January 2010-2017.

Daithi Heffernan, M.D., Associate Professor - Division of Surgical Res./Department of Surgery,
R.I. Hospital/Brown University School of Medicine, Providence, RI, January 2018-
present.

Assistant Professor - Division of Surgical Res./Department of Surgery, R.I.
Hospital/Brown University School of Medicine, Providence, RI, January 2008-2018.

Steven C. Katz, M.D., Associate Professor - Department of Surgery, R.I. Hospital/Brown
University School of Medicine, Providence, RI, July 2022-**present**.

Xin Huang, M.D., Ph.D., Instructor of Surgery (Research) - Division of Surgical Res./
Department of Surgery, R.I. Hospital/Brown University School of Medicine, Providence,
RI, July 2011-June 2014.

Qing Lu, D.V.M., Ph.D., Program Officer, Division of Lung Diseases, NIH-NHLBI, Bethesda,
MD, February 2020-**present**.

Associate Professor of Medicine (Research), Providence V.A. Medical Center/ Brown
University School of Medicine, January 2014-January 2020.

Assistant Professor of Medicine (Research), Providence V.A. Medical Center/ Brown
University School of Medicine, January 2013-September 2014.

Rajan Thakkar, M.D., Associate Professor - Center for Pediatric Trauma Research/ Pediatric
Surgery/ Department of Surgery, Nationwide Children's Hospital/The Ohio State
University School of Medicine, Columbus, OH, 2021-**present**.

Assistant Professor - Center for Pediatric Trauma Research/ Pediatric Surgery/
Department of Surgery, Nationwide Children's Hospital/The Ohio State University
School of Medicine, Columbus, OH, 2015-2021.

Instructor of Surgery/Fellow in Pediatric Surgery - Pediatric Surgery/ Department of Surgery, Nationwide Children's Hospital/The Ohio State University School of Medicine, Columbus, OH, July 2013-2015

Sean Monaghan, M.D., Associate Professor - Division of Surgical Res./Department of Surgery, R.I. Hospital/Brown University School of Medicine, Providence, RI, September 2022-**present**.

Assistant Professor - Division of Surgical Res./Department of Surgery, R.I. Hospital/Brown University School of Medicine, Providence, RI, March 2015-September 2022.

Trainees Who Have Gone on to Industry or Non-Profit Organizations:

Patricia S. Grutkoski, Ph.D.: Research Scientist; Repro-Medics, Cambridge, MA, July 2003-2005.

- Technical Service Manager of the Toxicology Division, Toxikon, Inc., Bedford, MA, January 2006-2007
- Res. Scientist, Abbott Northwestern Hospital, Molecular Diagnostic/Flow Cytometry Lab, Minneapolis, MN, 2007-**present**.

Xin Huang, M.D., Ph.D., Senior Research Associate – ImmuNext, Inc., Lebanon, NH, July 2014- **present**.

Sam I. McNeal, M.S., Ph.D., Technology Transfer Specialist; Center for Disease Control (CDC) & Prevention, Atlanta, GA, 2020-**present**.

- Intellectual Property Analyst; Oklahoma Medical Research Foundation, Oklahoma City, OK, February 2016-2020

Noelle Hutchins, M.S., Ph.D., Biotech Investment Associate, Omega Funds, Boston, MA, November 2020-**present**

- Science and Medicine Advisor for the American Heart Association, Charlotte, NC, November 2016-2020

Anne-Lise Rossi, Ph.D.: Medical Advisor Critical Care, Nordic Pharmaceuticals, Inc., Paris, France, March 2018-**present**

- Sci. Proj. Manager, KPL Paris, Paris, France, October 2017-February 2018
- Sci, Dir. & Bus. Develop., TRInnova, Paris, France, September 2016-October 2017

Bethany Biron-Girard, M.S., Ph.D.: Clinical Biomarker Sr. Manager - Clinical Operations at Moderna, Boston, MA, October 2020-**present**

- Sr. Scientist-Translational Science, Mustang Biotech., Worcester, MA, July 2019-October 2020

- Scientist I, EpiVax Inc., Providence, RI, February 2018-June 2019

Nicholas Shubin, M.S., Ph.D.: CEO at NemaGen Discoveries, Princeton, NJ, September 2022-
present

- Field Application Specialist, Quanterix, Billerica, MA, USA, December 2019-September 2022.

Steven C. Katz, M.D., Chief Scientific Officer, TriSalus Life Sciences, Westminster, CO, USA,
June 2020-**present**.

Trainees Who Received Awards:

at Michigan State University:

Daniel R. Meldrum, B.S. (Medical Student): Awarded First Place at the Sixth Annual Michigan State University Biomedical Student Research Program 1990. Title of presentation: "Diltiazem restores lymphokine synthesis and decreases susceptibility to sepsis following hemorrhage."

Daniel R. Meldrum, B.S., (Medical Student): *Association for Academic Surgery-Student Research Award*, October 1991.

Daniel R. Meldrum, M.D.: *Finalist in the Young Investigator Award Competition*, 15th Annual *Shock Society Meeting*, Mobile, AL, June 7-10, 1992.

Patrick J. O'Neill, B.S. (Graduate Student): Awarded First Place in Graduate Student Competition at the Eighth Annual Department of Surgery Research Day Forum, Michigan State University, March 12, 1992.

Patrick J. O'Neill, B.S.: (Graduate Student) Recipient of Graduate Student *Travel Award* to present paper at 15th Annual *Shock Society Meeting*, Mobile, AL, June 7-10, 1992.

Hugh Lindsey, M.D.: Awarded First Place in Resident Basic Science Competition at the Eighth Annual Department of Surgery Research Day Forum, Michigan State University, March 12, 1992.

Patrick J. O'Neill, B.S. (Graduate Student): Awarded First Place in Graduate Student Competition at the Ninth Annual Department of Surgery Research Day Forum, Michigan State University, March 11, 1993.

Hugh Lindsey, M.D.: Awarded First Place in Resident Basic Science Competition at the Ninth Annual Department of Surgery Research Day Forum, Michigan State University, March 11, 1993.

Patrick J. O'Neill, Ph.D.: *1st Place Honors of Young Investigator Award Competition*, 16th Annual *Shock Society* Meeting, Santa Fe, NM, June 13-16, 1993.

Aaron J. Mayberry, M.D.: Winner of *Travel Fellowship* for presentation at 7th Annual Meeting of the Association for Academic Minority Physicians, Washington, D.C., October 22-24, 1993.

Robert G. Molnar, M.D.: Awarded First Place in Resident Basic Science Competition at the Tenth Annual Department of Surgery Research Day Forum, Michigan State University, March 17, 1994.

Robert G. Molnar, M.D.: Winner of *Travel Award* for presentation at 17th Annual *Shock Society* Meeting, Big Sky, MT, June 5-8, 1994.

Robert G. Molnar, M.D.: Awarded First Place in Resident Basic Science Competition at the Eleventh Annual Department of Surgery Research Day Forum, Michigan State University, March 31, 1995.

at Brown University/Rhode Island Hospital:

Martin K. Angele, M.D.: Winner of *Travel Award* for presentation at 20th Annual *Shock Society* Meeting, Indian Wells, CA, June 15-18, 1997.

Martin K. Angele, M.D.: Finalist in young investigator award competition at 5th Annual Research Celebration at Rhode Island Hospital, November 11, 1997.

Volker Kahlke (Medical Student): Finalist in young investigator award competition at 5th Annual Research Celebration at Rhode Island Hospital, November 12, 1997.

Robert A. Catania, M.D.: Winner of *Travel Award* for presentation at 21st Annual *Shock Society* Meeting, San Antonio, TX, June 14-17, 1998.

Chun-Shiang Chung, Ph.D.: Winner of *Travel Award* for presentation at 21st Annual *Shock Society* Meeting, San Antonio, TX, June 14-17, 1998.

Marcus W. Knöfrel, M.D.: Finalist in young investigator award competition at 6th Annual Research Celebration at Rhode Island Hospital, November 17, 1998.

Grace Y. Song, B.A. (Graduate/Medical Student): Finalist in the *Young Investigator Award Competition* and a *Travel Award* for a presentation at the 4th International Shock Congress (22nd Annual *Shock Society* Meeting), Philadelphia, PA, June 12-16, 1999.

Chun-Shiang Chung, Ph.D.: Winner of *Travel Award* for presentation at the 4th International Shock Congress (22nd Annual *Shock Society* Meeting), Philadelphia, PA, June 12-16, 1999.

Florian, Fitzal, B.S.: Winner of *Travel Award* for presentation at the 4th International Shock Congress (22nd Annual *Shock Society Meeting*), Philadelphia, PA, June 12-16, 1999.

Marcus W. Knöfrel, M.D.: Winner of *Travel Award* for presentation at the 23rd Annual *Shock Society Meeting*, Snowbird, UT, June 3-7, 2000.

Grace Y. Song, B.A. (Graduate/Medical Student): Recipient of *Alpha Omega Alpha Student Research Fellowship* for proposal entitled: Intracellular signaling pathways involved in the suppression of cell-mediated immunity seen in the septic host: the role of p38 MAPK. April-December 31, 2001.

Grace Y. Song, B.A. (Graduate/Medical Student): Winner of *Travel Award* for a presentation at the 24th Annual *Shock Society Meeting*, Marco Island, FL, June 9-13, 2001.

Joanne L. Lomas, M.S. (Graduate Student): *Finalist in the SLB Presidential Students Awards Competition* (includes *Travel Award*) at the conjoined 9th International Cytokine Society Meeting and the 35th Annual Society of Leukocyte Biology Meeting, Maui, HI, November 8-11, 2001.

Patricia S. Grutkoski, Ph.D.: Winner of *Travel Award* for presentation at the conjoined 9th International Cytokine Society Meeting and the 35th Annual Society of Leukocyte Biology Meeting, Maui, HI, November 8-11, 2001.

Sara Bray (Brown Univ. undergraduate): Winner of K.T. Romer-Undergraduate Teaching & Research Assistantship (UTRA) award; June-August 2002.

Rebecca J. Rhee: Recipient of "Honors in Biology" designation/prize along with Bachelor of Arts degree from Brown University, May 2002

Joanne L. Lomas, M.S. (Graduate Student): Finalist in the *Young Investigator Competition* (includes *Travel Award*) at the 25th Annual *Shock Society Meeting*, Big Sky, MT, June 8-11, 2002.

Joanne L. Lomas, M.S. (Graduate Student): *American Society for Investigative Pathology-Trainee Travel Award* for 2003 Experimental Biology Meeting, San Diego, CA, April 11-15, 2003.

Sara M. Bray: Recipient of "Honors in Biology" designation/prize along with Bachelor of Arts degree from Brown University, May 2003.

Joanne L. Lomas, M.S. (Graduate Student): *Travel Awardee* at the 26th Annual *Shock Society Meeting*, Phoenix, AZ, June 7-10, 2003.

Joanne L. Lomas, M.S. (Graduate Student): *Travel Awardee* at the 36th Annual Society of Leukocyte Biology Meeting, Philadelphia, PA, October 2-5, 2003.

Doreen E. Wesche, B.S. (Graduate Student): *American Society for Investigative Pathology-Trainee Travel Award* for Experimental Biology conference in Washington, D.C., April 2004

Joanne L. Lomas, M.S. (Graduate Student): 27th Annual *Shock Society Meeting*, Halifax, Nova Scotia, CANADA, June 5-8, 2004

Doreen E. Wesche, B.S. (Graduate Student): *1st Place Honors (winner) of the New Investigator Competition (includes Travel Award)* at the 27th Annual *Shock Society Meeting*, Halifax, Nova Scotia, CANADA, June 5-8, 2004.

Joanne L. Lomas, M.S. (Graduate Student): *Travel Awardee* at the 37th Annual Society of Leukocyte Biology Meeting, Toronto, Ontario, CANADA, October 21-23, 2004.

Mario Perl, M.D. (Post-Fellow/Res. Assoc.): *Travel Awardee* at the 37th Annual Society of Leukocyte Biology Meeting, Toronto, Ontario, CANADA, October 21-23, 2004.

Joanne L. Lomas-Neira, M.S. (Graduate Student): Finalist in the *Young Investigator Award Competition* at the 12th Annual Research Celebration at Rhode Island Hospital, October 28, 2004.

Benjamin Galen, Recipient of "Biology Prize" designation/prize along with Honors- Bachelor of Science degree from Brown University, May 2005.

Doreen E. Wesche, B.S. (Graduate Student): *Travel Awardee* at the 28th Annual *Shock Society Meeting*, Marco Island, FL, June 4-7, 2005.

Mario Perl, M.D. (Post-Fellow/Res. Assoc.): Finalist in the *Young Investigator Competition (includes Travel Award)* at the 28th Annual *Shock Society Meeting*, Marco Island, FL, June 4-7, 2005.

Mario Perl, M.D. (Post-Fellow/Res. Assoc.): Finalist in the *American College of Surgeon's/ New England Regional Resident Paper Competition* at the 10th Annual *New England Regional Trauma Conference*, Burlington, MA, November 10, 2005.

Doreen E. Wesche-Soldato, B.S. (Graduate Student): Selected for presentation as a part of "*ASIP-Highlights: Graduate Student Posters in Pathology*" at the Experimental Biology conference in San Francisco, CA; April 1, 2006.

Doreen E. Wesche-Soldato, B.S. (Graduate Student): Selected for presentation as a part of "*ASIP-Predoctoral-Merit Award*" at the Experimental Biology conference in San Francisco, CA; April 3, 2006.

Caroline Hu: Recipient of "Honors in Biology" designation/prize along with Bachelor of Arts degree from Brown University, May 2005

Mario Perl, M.D. (Post-Fellow/Res. Assoc.): *Travel Awardee* at the 29th Annual *Shock Society*, Broomfield, CO, June 3-6, 2006.

Doreen E. Wesche-Soldato, B.S. (Graduate Student): Finalist in the *New Investigator Competition* (includes *Travel Award*) at the 29th Annual *Shock Society* Meeting, Broomfield, CO, June 3-6, 2006.

Mario Perl, M.D. (Post-Fellow/Res. Assoc.): *1st Place Honors (winner) in the New Investigator Competition* at the 29th Annual *European Shock Society* Meeting, Ulm, Germany, September 14-16, 2006.

Doreen E. Wesche, B.S. (Graduate Student): *Student/Postdoctoral Fellow travel award* to the 2006 joint 39th Society of Leukocyte Biology (SLB)/ 8th Biennial Meeting of the International Endotoxin & Innate Immunity Society (INIIS) meeting, to be held in San Antonio, TX, November 9-11, 2006.

Mario Perl, M.D. (Post-Fellow/Res. Assoc.): *Travel Awardee* at the 30th Annual *Shock Society*, Baltimore, MD, June 9-12, 2007.

Fabienne Venet, Ph.D., PharmD. (Post-Fellow/Res. Assoc.): *Student/Postdoctoral Fellow travel award* to the 40th Society of Leukocyte Biology (SLB) meeting, held in Cambridge, MA, October 11-13, 2007.

Joanne L. Lomas-Neira, Ph.D., M.S. (Post-Fellow/Res. Assoc.): Finalist in the *Young Investigator Award Competition* at the 15th Annual Hospitals Research Celebration at Rhode Island Hospital, November 8, 2007.

Fabienne Venet, M.S., PharmD, Ph.D. (Post-doctoral fellow): *American Society for Investigative Pathology-Trainee Travel Award* for 2008 Experimental Biology Meeting, San Diego, CA, April 5-9, 2008.

Joanne L. Lomas, M.S., Ph.D. (Post-doctoral fellow): *A.D. Sobel- American Society for Investigative Pathology Education Fund Scholar Award* for 2008 Experimental Biology Meeting, San Diego, CA, April 5-9, 2008.

Fabienne Venet, Ph.D., PharmD. (Post-Fellow/Res. Assoc.): *Travel Awardee* at the conjoined 6th International Federation of Shock Society (IFSS)/31st Annual *Shock Society* meeting, Cologne, Germany, June 28-July 2, 2008.

Yvonne Wang (Brown Univ. Medical Student): Recipient of Medical Student Summer Research Assistantship (UTRA) award; June-August 2008.

Fabienne Venet, Ph.D., PharmD. (Post-Fellow/Res. Assoc.): Prix (Price) Jansen, from the Académie Nationale de Médecine = for work on the topic entitled: *Altérations lymphocytaires*

induites par les états septiques sévères: vers de nouvelles perspectives diagnostiques et thérapeutique - Paris, France. July 2008.

Joanne L. Lomas, M.S., Ph.D. (Post-doctoral fellow): *Student/Postdoctoral Fellow travel award* to the 41st Society of Leukocyte Biology (SLB) meeting, held in Denver, CO, November 6-8, 2008.

Gwendolyn F. Elphick, M.S., Ph.D. (Post-doctoral fellow): *Student/Postdoctoral Fellow travel award* to the 41st Society of Leukocyte Biology (SLB) meeting, held in Denver, CO, November 6-8, 2008.

Fabienne Venet, M.S., Ph.D., PharmD. (Post-doctoral fellow): *Student/Postdoctoral Fellow travel award* to the 41st Society of Leukocyte Biology (SLB) meeting, held in Denver, CO, November 6-8, 2008.

Joanne L. Lomas-Neira, M.S., Ph.D. (Post-doctoral fellow): Selected for receipt of "ASIP-Experimental Pathologist-in-Training 'Merit' Award (EPIT)" at the Experimental Biology conference in New Orleans, LA, April 22, 2009.

Sima Patel (Brown University-undergraduate) Recipient of "Donna Williamson Erickson '74 Endowed" Summer Research Collaboration Fellowship (UTRA); June-August 2009

Joanne L. Lomas-Neira, M.S., Ph.D. (Instructor): Selected for receipt of "*Gordon Conference Scholarship*" to defray cost of attending the '2009-Angiogenesis-Gordan Research Conference' at Salve Regina University in Newport, RI, August 2-7, 2009.

Rajan Thakkar, M.D. (Resident/Post-Fellow): Finalist in the *Young Investigator Award Competition* at the 17th Annual Research Celebration at Rhode Island Hospital, October 22, 2009.

Noelle A. Hutchins, (Graduate Student): *Winner of the Charles A. Janeway Memorial Award* at the 35th Annual New England Immunology Conference at Woods Hole, MA, October 24-25, 2009.

Sadella Santos (Undergraduate-Leadership Alliance Student): *ABRCMS Poster Presentation Awardee* at the Annual Biomedical Research Conference for Minority Students, Phoenix, AZ, November 4-7, 2009.

Sam I. McNeal (Graduate Student): received a "*Keystone Symposia Underrepresented Minority Scholarship*" to help defray travel and lodging expenses associated with attendance of the Keystone Symposia on 'Cell Death Pathways: Apoptosis, Autophagy and Necrosis' in Vancouver, British Columbia, CANADA, March 12-17, 2010.

Noelle A. Hutchins, (Graduate Student): Winner of the *TSIS-Travel Award* & award finalist *Free Paper Award Session-SIS-Europe*” at the 8th annual congress on Trauma, Shock, Inflammation & Sepsis (TSIS 2010) in Munich, Germany on March 12th, 2010.

Ye Sul Kim (Brown University-undergraduate) Recipient of “W & F Hewlett” Summer Research Collaboration Fellowship (UTRA); June-August 2010.

Sam I. McNeal (Graduate Student): Finalist in the *New Investigator Competition* (includes *Travel Award*) at the 33rd Annual *Shock Society* Meeting, Portland, OR, June 13, 2010.

Sam I. McNeal (Graduate Student): received a “*Gordon Conference Scholarship*” to help defray travel and registration expenses associated with attendance of the Gordon Conference on ‘Cell Death’ at Salve Regina University in Newport, RI, August 22-27, 2010.

Noelle A. Hutchins (Graduate Student): Selected to receive a travel award to attend Intramural NIAID Research Opportunities (INRO) program held at Bethesda, MD, February 7th, 2011.

Noelle Hutchins (Graduate Student): Winner of the *AAI Trainee-Travel Award* to support presentation of an Oral Paper as a part of a block symposia entitled: “Inflammation and Cell Adhesion/Migration” & a poster presentation at the 98th annual meeting of the *American Association of Immunology (AAI) (Immunology 2011)* in San Francisco, CA, May 13-17th, 2011.

Noelle A. Hutchins (Graduate Student): Winner of the *Shock Society-Travel Award* to support presentation of an Oral Paper/Abstract as a part of the 34th Annual Conference on Shock in Norfolk, VA, June 11-14, 2011.

Nicholas J. Shubin (Graduate Student): Recipient of 3rd place for best poster presented as a part of 21st Annual Retreat for the Graduate Program in Pathobiology at Brown University, Haffenreffer estate, Bristol, RI, Poster presented on August 30th, 2011.

Fei Wang, M.D., M.S. (Visiting Research Fellow): Recipient of State Scholarship from China Scholarship Council (No. 2011658019) to work as research fellow in the laboratory of Dr. Alfred Ayala at Rhode Island Hospital-Brown University from January 2012-April 2013.

Sam I. McNeal (Graduate Student): received a *Travel award* to attend the 2012 St. Jude National Graduate Student Symposium (NGSS) at St. Jude Children's Research Hospital in Memphis, TN, March 20–24, 2012.

Nicholas J. Shubin (Graduate Student): Winner of the *Shock Society-Travel Award* to support presentation of a poster/abstract as a part of the conjoined 7th Congress of the International Federation of Shock Societies and the 35th Annual Conference on Shock in Miami Beach, FL, June 9-13, 2012.

Walter Anazonwu, (Brown Univ. Medical Student): Recipient of Medical Student Summer Assistantship through our Basic and Translational Research (BTR) Program (T35 HL094308); June-August 2012.

Noelle A. Hutchins (Graduate Student): Recipient of a *pre-doctoral fellowship* to support her travel to/ participation in ‘The Academy for Future Science Faculty’ program at the Northwestern University Feinberg School of Medicine, Chicago, IL, July 21-23, 2012.

Noelle A. Hutchins (Graduate Student): Winner of the *Society of Leukocyte Biology-Travel Award* to support presentation of an Oral Paper/Abstract as a part of the 45th Annual Meeting of the Society of Leukocyte Biology in Maui, HI, October 28-30, 2012.

Youping Wu, M.D., M.S. (Visiting Research Fellow): Recipient of State Scholarship from China Scholarship Council (No. 201206580006) to work as research fellow in the laboratory of Dr. Alfred Ayala at Rhode Island Hospital-Brown University from January 2013-April 2014.

Noelle A. Hutchins (Graduate Student): Abstracts was selected for presentation as part of “Highlights: Graduate Student Research in Pathology” session as a part of American Society for Investigative Pathology (ASIP)-Experimental Biology 2013 meeting in Boston, MA, April 20, 2013.

Lunxian (Kelly) Tang (Visiting Res. Fellow): Winner of the *Society of Leukocyte Biology-Travel Award* to support presentation of an Oral Paper/Abstract as a part of the 46th Annual Meeting of the Society of Leukocyte Biology in Newport, RI, October 20-22, 2013.

Noelle A. Hutchins (NRSA-T32 post-doctoral fellow): received a “*Keystone Symposia – Under-represented Minority Scholarship*” to help defray travel and registration expenses associated with attendance of the Keystone Symposia on ‘Inflammatory Diseases: Recent Advances in Basic and Translational Research and Therapeutic Treatments’ at the Fairmont Hotel Vancouver in Vancouver, British Columbia, CANADA, January 17-22, 2014.

Tianzhu Tao, M.D., M.S. (Visiting Research Fellow): Recipient of State Scholarship from China Scholarship Council (No. 201306580023) to work as research fellow in the laboratory of Dr. Alfred Ayala at Rhode Island Hospital-Brown University from January 2014-April 2015.

Lunxian (Kelly) Tang (Visiting Research Scientist): Finalist in the *New Investigator Competition* (includes *Travel Award*) at the 37th Annual Conference on Shock, Shock Society, Charlotte, NC, June 9, 2014.

Noelle A. Hutchins (T32-Post-doctoral fellow): Chosen to give short-talk/snap-shot presentation as a part of the *New Investigator Session* at the 37th Annual Conference on Shock, Shock Society, Charlotte, NC; June 10, 2014.

Noelle A. Hutchins (NRSA-T32 post-doctoral fellow): received a “*Shock Society-Diversity Enhancement Award*” to help defray travel and registration expenses associated with attendance of the 37th Annual Conference on Shock, Shock Society, Charlotte, NC; June 10, 2014.

Craig Erikson, B.S. (Medical Student Fellow): Recipient of Brown Medical Scholars Program Fellowship to work as research fellow in the laboratory of Dr. Alfred Ayala at Rhode Island Hospital-Brown University from November 2014-October 2015.

Bethany M. Biron (Graduate Student): Recipient of 2nd place citation for best abstract poster presented as a part of 22nd Annual Lifespan-Hospital Research Day program, RI Hospital-George Auditorium, Providence, RI; poster presented on October 2nd, 2014.

Tristen T. Chun (Resident/Post-Doctoral Fellow): Winner of the *Resident Scholarship-Travel Award* to support attendance of 2015 Leadership Conference and Advocacy Summit of the American College of Surgeons in Washington, DC, April 18-21, 2015.

Tristen T. Chun (Resident/Post-Doctoral Fellow): Winner of the *Shock Society-Travel Award* to support an oral/abstract presentation as a part of the ‘New Investigator Forum’ as a part of the 38th Annual Conference on Shock in Denver, CO, June 6-9, 2015.

Bethany M. Biron (Graduate Student): Winner of the *Shock Society-Travel Award* to support presentation of a Poster/Abstract as a part of the 38th Annual Conference on Shock in Denver, CO, June 6-9, 2015.

Tingting Cheng (Visiting Res. Fellow): Winner of the *Society of Leukocyte Biology-Travel Award* to support presentation of a Poster/Abstract as a part of the 48th Annual Meeting of the Society of Leukocyte Biology in Raleigh, NC, September 27-29, 2015.

Daithi S. Heffernan (Assistant Prof. Surgery—Jr. Fac. Mentee): Recipient of *NIH-K08 Award* (4 yr. duration), Providence, RI; September 1, 2015.

Sean F. Monaghan (Assistant Prof. Surgery—Jr. Fac. Mentee): Recipient of Brown University *Dean’s Award* (2 yr. duration), Providence, RI; October 1, 2015.

Anne-Lise Rossi (Resident/Post-Doctoral Fellow): 3rd Place Poster in Basic Science Category of the *New Investigator Award Competition* at the 23rd Annual Research Celebration at Rhode Island Hospital; October 29, 2015

Eleanor A. Fallon (Resident/Post-Doctoral Fellow): American College of Surgeons’ Committee on Trauma; 2nd Place Region One--Basic Science, Oral Presentation; Boston, MA, November 9, 2015.

Eleanor A. Fallon (Resident/Post-Doctoral Fellow): 1st place recognition for oral research presentation at the RI American College of Surgeons research symposium in Cranston, RI, April 7, 2016.

Eleanor A. Fallon (Resident/Post-Doctoral Fellow): Recipient of *SIS Foundation-Basic & Clinical Translational Research Fellowship award* (\$35, 000 for 1 yr.), awarded at the 36th meeting of the Surgical Infection Society at Palm Beach, FL, May 21, 2016.

Eleanor A. Fallon (Resident/Post-Doctoral Fellow): Winner of the *Shock Society-Travel Award* to support an oral/abstract presentation as a part of the ‘Parallel Session’ at the 39th Annual Conference on Shock in Austin, TX, June 12, 2016.

Shumin Xu (Visiting Res. Fellow): Winner of the *Shock Society-Travel Award* to support an oral/abstract presentation as a part of the ‘New Investigator Forum’ at the 39th Annual Conference on Shock in Austin, TX, June 14, 2016.

Sean F. Monaghan (Assistant Prof. Surgery—Jr. Fac. Mentee): Recipient of 14th *C. James Carrico Faculty Research Fellowship award-Amer. Coll. Surg.* (2 yr. duration), Providence, RI, July 1, 2016.

Bethany M. Biron (Graduate Student): Winner of the *Society of Leukocyte Biology - Travel Award* to support oral (‘Poster Flash Talk’ session) & poster presentation as a part of the 49th annual meeting of the Society of Leukocyte Biology/ “Neutrophil 2016” meeting in Verona, Italy, September 15-17, 2016.

Jiali Zhu (Co-mentored fellow with Dr. J Lomas-Neira): Winner of the *Society of Leukocyte Biology - Travel Award* to support poster presentation as a part of the 49th annual meeting of the Society of Leukocyte Biology/ “Neutrophil 2016” meeting in Verona, Italy, September 15-17, 2016.

Marilyn Le (Graduate Student, MPPB program): Winner of the *International Federation of Shock Societies - Travel Award* to support oral presentation as a part of the 8th annual Congress of the International Federation of Shock Societies in Tokyo, Japan, October 3-5, 2016.

Chyna Gray (Undergraduate-Leadership Alliance Student): *ABRCMS Poster Presentation Travel Grant Awardee* at the Annual Biomedical Research Conference for Minority Students, Tampa, FL, November 4-7, 2016.

Tristen Chun (Resident/Post-Doctoral Fellow): 1st place recognition for oral research presentation at the RI American College of Surgeons research symposium in Cranston, RI, April 6, 2017.

Bethany M. Biron-Girard (Post-Doctoral Fellow): Was selected as recipient of a *NIH/NRSA-T32 Post-Doctoral Research Fellowship award* (\$50-60,000 for 1-2 yrs.), awarded by the Brown Respiratory Research Training Program (BR RTP) at the Alpert School of Medicine at Brown University, Providence, RI, June 1st, 2017.

Bethany M. Biron-Girard (Post-Doctoral Fellow): Honorable Mention Poster in Basic Science Category of the *New Investigator Award Competition* at the 25th Annual Research Celebration at Rhode Island Hospital; October 31, 2017.

Eleanor A. Fallon's (Resident/Post-Doctoral Fellow) oral paper presentation entitled: "Survival and pulmonary injury after neonatal sepsis: PD-1:PD-L1's contributions to mouse and human immunopathology.", was recognized as one of the top 2 papers presented by a resident/new member at the 38th annual meeting of the Surgical Infections Society (SIS), in Westlake Village, CA, April 25, 2018.

Eleanor A. Fallon's (Resident/Post-Doctoral Fellow) oral paper presentation entitled: "Programmed Cell Death Receptor-1 (PD-1)'s Effects on Innate Immune Cells: Unraveling Lung Injury After Neonatal Intra-Abdominal Sepsis.", was recognized as the top paper presented by a resident/new member in basic science at the New England Surgical Society's 25th Annual Surgical Resident and Fellow Research Presentation Day, in Waltham, MA, May 8, 2018.

Chyna Gray (Graduate Student-MCB program): received a *SLB Mentoring Diversity Travel Award* to attend and present a poster at the 2018 joint 50th Society of Leukocyte Biology (SLB)/14th Biennial Meeting of the International Endotoxin & Innate Immunity Society (IEIIS) meeting, to be held in Phoenix, AZ, October 13-16, 2018

Michelle Wakeley (Resident/Post-Doctoral Fellow): *1st Place Honors (winner) of the New Investigator Competition* (includes *Travel Award*) at the 42nd Annual Conference on Shock, Shock Society, Coronado, CA, June 8, 2019.

Michelle Wakeley (Resident/Post-Doctoral Fellow): Winner of the *International Federation of Shock Societies - Travel Award* to support poster presentation as a part of the conjoined 18th European Shock Society & the 9th annual Congress of the International Federation of Shock Societies in Chania, Greece, October 8-12, 2019.

Michelle Wakeley (Resident/Post-Doctoral Fellow): American College of Surgeons' Committee on Trauma; 1st Place Region One--Basic Science, Oral Presentation; Boston, MA, November 10, 2019.

Chyna Gray (Graduate Student-MCB program): received a *SLB Travel Award* to attend and provide an oral presentation and poster at the 51st Society of Leukocyte Biology (SLB) meeting, to be held in Boston, MA, November 15-18, 2019.

Michelle Wakeley (Resident/Post-Doctoral Fellow): received a *SLB Travel Award* to attend and provide a poster presentation at the 51st Society of Leukocyte Biology (SLB) meeting, to be held in Boston, MA, November 15-18, 2019.

Brandon Armstead (Graduate Student, Grad. Path. program): Was selected as recipient of a *NIH/NRSA-T32 Pre-Doctoral Trainee award* (\$50-60,000 for 1-2 yrs.), awarded by the Brown

Respiratory Research Training Program (BRRTP) at the Alpert School of Medicine at Brown University, Providence, RI, February 1st, 2020.

Michelle Wakeley (Resident/Post-Doctoral Fellow): American College of Surgeons' Committee on Trauma; Finalist in National Competition--Basic Science, Oral Presentation; Boston, MA, October 1st, 2020.

Chung (Sunny) Lee (Brown University-undergraduate): Recipient of a "Karen T. Romer" Undergraduate Teaching and Research Award (UTRA); June-August 2021.

Denise Danielle Tamesis (Brown University-undergraduate): Recipient of a "Karen T. Romer" Undergraduate Teaching and Research Award (UTRA); June-August 2021.

Eleanor A. Fallon's (Resident/Post-Doctoral Fellow) was recognized with the Haffenreffer House Staff Excellence Award for 2021, Providence, RI, April 28, 2021.

Habesha 'Fasika' Petros (Brown University-undergraduate): Recipient of a "SPRINT"/ Undergraduate Teaching and Research Award (UTRA); January-May 2022.

Chyna Gray (Graduate Student, MCB program): Was selected as recipient of a *NIH/NRSA-T32 Pre-Doctoral Trainee award* (\$50-60,000 for 1-2 yrs.), awarded by the Brown Respiratory Research Training Program (BRRTP) at the Alpert School of Medicine at Brown University, Providence, RI, May 12, 2022.

Brandon Armstead (Graduate Student, Grad. Path. program): received a *Diversity Enhancement Award* to attend the 45th Annual Conference on Shock, to be held in Toronto, Canada, June 4-7, 2022.

Chyna Gray (Graduate Student-MCB program): selected to give an oral presentation/travel award at the 4th annual Dr. Samuel M. Nabrit Conference for Early Career Scholars at Brown University in Providence, RI, June 17-18, 2022.

Brandon Armstead (Graduate Student, Grad. Path. program): Was selected as recipient of a *NIH-NIGMS Pre-Doctoral Trainee-Administrative Diversity Supplement award* (\$50-60,000 for 1-2 yrs.), awarded by the NIGMS under Dr. Ayala's R35 award at the Lifespan-RI Hospital, Providence, RI, June 22nd, 2022.

Chyna Gray (Graduate Student-MCB program): selected as a '*Graduate Student Finalist*' in the '*SLB Presidential Scholars*' competition (oral presentation) and received a *SLB Travel Award* to attend the 55th Society of Leukocyte Biology (SLB) meeting, to be held in Hilton Waikoloa Village located on the Big Island, HI, October 27, 2022.

Chyna Gray (Graduate Student-MCB program): selected as a recipient of the '*Barry Jay Rosen Memorial award*' from Brown University's MCB-Graduate program (the award is for a Ph.D. thesis that demonstrates exceptional merit), Providence, RI, May 24, 2023.

Chyna Gray-Lovell (NRSA-T32 post-doctoral fellow): was selected as recipient of a *NIH/NRSA-T32 Pre-Doctoral Trainee award* (\$50-60,000 for 1-2 yrs.), awarded by the Trauma and Inflammation Research Training Program (TIRTP) at the Alpert School of Medicine at Brown University, Providence, RI, July 1st, 2023.

Brandon Armstead (Graduate Student-GPP program): selected as a recipient of the “*Nancy L. Thompson Graduate Award in ‘Infection & Inflammation Research’*” from Brown University’s-Graduate Pathobiology Program (the award is to recognize a graduate student who’s shown outstanding dedication & accomplishments in the field of infection & inflammation, has contributed to the GPP, in so doing has inspired & distinguished & set himself apart from his peers), East Providence, RI, August 30, 2023.

Matthew Kwasnik, B.S. (Medical Student): Recipient of Brown University AMS Summer Funding 2024 award (part of Basic and Translational Research [BTR] Program) to work as research fellow in the laboratory of Dr. Alfred Ayala at Rhode Island Hospital-Brown University from June-August 2024.

Fernando Gutierrez-Garcia (Graduate Student, Grad. Path. program): received an *American Association of Immunologists-Minority Scientist Travel Award* to attend the ‘Immunology 2024’ conference, to be held in Chicago, IL, May 3-7, 2024.

Brandon Armstead, PhD (NRSA-T32 post-doctoral fellow): was selected as recipient of a *NIH/NRSA-T32 Pre-Doctoral Trainee award* (\$50-60,000 for 1-2 yrs.), awarded by the Trauma and Inflammation Research Training Program (TIRTP) at the Alpert School of Medicine at Brown University, Providence, RI, July 1st, 2024.

Fernando Gutierrez-Garcia (Graduate Student, Grad. Path. program): Was selected as recipient of a *NIH-NIGMS Pre-Doctoral Trainee-Administrative Diversity Supplement award* (\$50-60,000 for 1-2 yrs.), awarded by the NIGMS under Dr. Ayala’s R35 award at the Lifespan-RI Hospital, Providence, RI, December 1st, 2024.

HOSPITAL TEACHING ROLES

Preceptor for Surgical Residents Basic Science Conference (R.I. Hospital):
Oct 1996, Aug 1997, Sept 1998, Dec 2000

Research Mentor-T32-NRSA surgical resident fellow, Ryan Z. Swan, originally from R.I. Hospital/Brown Univ. Surgical Residency Program.

Research Mentor-Versaci Award surgical resident fellow, Rajan Thakkar, originally from R.I. Hospital/Brown Univ. Surgical Residency Program.

Research Mentor-Versaci Award surgical resident fellow, Sean Monaghan, originally from R.I. Hospital/Brown Univ. Surgical Residency Program.

Research Mentor-Versaci Award surgical resident fellow, Maude Kettenmann, originally from R.I. Hospital/Brown Univ. Surgical Residency Program.

Research Mentor-Versaci Award surgical resident fellow, John Young, originally from R.I. Hospital/Brown Univ. Surgical Residency Program.

Research Mentor-Versaci Award surgical resident fellow, Whitney Young, originally from R.I. Hospital/Brown Univ. Surgical Residency Program.

Research Co-Mentor (with Dr. Jonathan Reichner)-T32-NRSA post-doctoral fellow, Noelle Hutchins, originally from Brown Univ.-Grad. Pathobiol. Program.

Research Mentor-Versaci Award surgical resident fellow, Tristen Chun, originally from R.I. Hospital/Brown Univ. Surgical Residency Program.

Research Mentor-Versaci Award surgical resident fellow, Eleanor A. Fallon, originally from R.I. Hospital/Brown Univ. Surgical Residency Program.

Research Mentor-Versaci Award surgical resident fellow (1st year)/ T32-NRSA post-doctoral fellow (2nd year), Michelle Wakeley, originally from R.I. Hospital/Brown Univ. Surgical Residency Program.

Research Mentor- T32-NRSA post-doctoral fellow, Elizabeth Tindal, originally from R.I. Hospital/Brown Univ. Surgical Residency Program.

Research Mentor- T32-NRSA post-doctoral fellow, Emily Hensler, originally from R.I. Hospital/Brown Univ. Surgical Residency Program.