

**Cahleen Mae Shrier, Ph.D.**

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**Education**

1985-1991. Loma Linda University, Loma Linda, California. Ph.D. in Physiology. Research Emphasis: The Role of Catecholamines in the Initiation of Labor.

1989. Loma Linda University, Loma Linda, California. Certificate for Basic Microsurgery Technician.

1983-1985. Loma Linda University, Loma Linda, California. Master of Science in Physiology. Research Emphasis: The Role of the Parotid Salivary Gland in the Control of Insulin Secretion.

1979-1983. Southern California College, Costa Mesa, California. Bachelor of Arts in Chemistry and Biology. Research emphasis: The Influence of Elevation on the Chemical Composition of the Creosote Bush.

**Work Experience**

1998-present. Professor. Azusa Pacific University, Azusa, California. Department of Biology and Chemistry. Research emphasis: Neurobiology of Empathy. Courses: Fundamentals of Biology, General Biology I, General Biology I Lab, Endocrinology of Reproduction, Human Physiology, Human Physiology Lab, Gender Differences, Neurobiology Lab.

2001-present. Science and Math Scholars Program Director. Azusa Pacific University, Azusa, California. This position involves tracking the progress of students selected for the program.

2000-present. Undergraduate Research Coordinator for the Sciences. Azusa Pacific University, Azusa, California. This position involves tracking the progress of science students involved in undergraduate research.

1997-1999. Director of Undergraduate Research. Azusa Pacific University, Azusa, California. This position serviced all disciplines at the University. I developed a process for funding undergraduates to attend and present their projects at research conferences. I also created a campus poster session for undergraduate students to compete for awards.

1995-1998. Assistant Professor. Azusa Pacific University, Azusa, California. Department of Biology and Chemistry. Research emphasis: The Potential Role of Androstenedione in Intrauterine Growth Retardation. In addition, Does Bombesin Contract the Pregnant Rat Uterus? Courses: Fundamentals of Biology, Fundamentals of Biology Lab, General Biology I, General Biology I Lab, Endocrinology of Reproduction, Human Physiology Lab, Senior Seminar, Gender Differences.

1994-1995. Instructor. Azusa Pacific University, Azusa, California. Department of Biology and Chemistry. Courses: Fundamentals of Biology, Fundamentals of Biology Lab, Senior Seminar, Gender Differences, General Biology I, General Biology I Lab, Human Physiology Lab.

1993-1993. Clinical Research Associate. Eli Lilly Canada, Scarborough , Ontario, Canada. Project manager for clinical trials.

February 1992 and February 1993. Lecturer. University of Toronto, Toronto, Ontario, Canada. Topics: The Action and Mechanisms of Hormones; The Hormones Involved in Growth.

1991-1993. Post-Doctoral Fellow. Mount Sinai Hospital, Toronto, Ontario, Canada. Research emphasis: Appearance and Hormonal Regulation of Connexin-43 During Pregnancy and Labor.

## **Publications**

Charles A. Ducsay and **Cahleen M. McNutt**. Circadian Uterine Activity in the Pregnant Rhesus Macaque: Do Prostaglandins Play a Role? *Biology of Reproduction*, 40:988-993; 1989.

**Cahleen M. McNutt** and Charles A. Ducsay. Catecholamines and Uterine Activity Rhythms in the Pregnant Rhesus Macaque. *Biology of Reproduction*, 45:373-379; 1991.

**C.M. McNutt**, B.J. Nicholson and S.J.Lye. ACTH-induced preterm labour in the ewe is associated with increased mRNA and protein levels of myometrial gap junction protein, connexin-43. *Journal of Endocrinology*, 141:195-202; 1994.

**Cahleen M. Shrier**. A review of Ernest L. Boyer and Arthur Levine's A Quest for Common Learning: The Aims of General Education. In: *The Liberal Arts in Higher Education: Challenging Assumptions Exploring Possibilities*. Eds: Diana Glyer and David L. Weeks, University Press of America, Inc., Lanham, Maryland, 1998, pp. 111-116.

**Cahleen Shrier**, Jeff Harvey, John Erickson, Amy Sell, Mehr Filmardirossian, Rebecca S. Gay, Cynthia N. Berry, and Lisa M. Harvey. The Effect of Androstenedione Treatment on Pregnant Rats. *Biology of Reproduction*, 60(1):125, Abstract# 102, 1999.

**Cahleen M. McNutt Shrier**, Jeffrey W. Harvey, Ame C. Sell, Mher V. Filmardirossian, John T. Erickson, Rebecca S. Gay, Cynthia N. Berry, and Lisa M. Harvey. Maternal and Fetal Estrogen levels After Administration of Androstenedione to Pregnant Rats. *Biology of Reproduction*, 65(1):331-2, Abstract# 574, 2001.

**Cahleen Shrier**, Malgorzata Mlynarczyk, Kanchan M Kaushal, Lubo Zhang and Charles Ducsay. Chronic Cocaine Treatment in the Pregnant Rat Mimics the Effect of Chronic Hypoxia on Myometrial Contractility in Vitro. *Journal of the Society for Gynecologic Investigation*, 9(1):303a, abstract #733, Jan/Feb 2002.

**Cahleen Shrier**, Malgorzata Mlynarczyk, Kanchan M Kaushal, and Charles Ducsay. Chronic Hypoxia Elevates Myometrial and Serum Interleukin Concentrations in Rats During Late Gestation. 49th Annual Meeting of the Society for Gynecologic Investigation, March 20-23, 2002, Los Angeles, CA. *Journal of the Society for Gynecologic Investigation*, 9(1):303a, abstract #732, Jan/Feb 2002.

**Cahleen Shrier** and Tally Flint. The Science of the Crucifixion. *APU Life*, Spring 2002, pp. 6-7.

**Cahleen Shrier** and Tally Flint. The Science of the Crucifixion. Today @ APU, APU home web page - [www.apu.edu](http://www.apu.edu), April 2002.

Paul Shrier and **Cahleen Shrier**. Acts of Mercy as Mimesis: A Neuroscientific Critique of John Wesley's Means of Grace in Sanctification. *Journal of Pastoral Theology*. Accepted (7/05), pending publication (Fall 2005).

Paul Shrier and **Cahleen Shrier**. "Playing God" - the Reprise: A Theological Investigation of Human Embryonic Stem Cell Research. *Prospectives in Science: A Journal of the American Scientific Affiliation*. (March 2006).

**Cahleen Shrier** , Malgorzata Mlynarczyk , Kanchan M. Kaushal , Lubo Zhang and Charles A. Ducsay. Chronic Cocaine Treatment Decreases Myometrial Contractile Responsiveness to Oxytocin but not Arginine Vasopressin in the Near-term Rat. *Biology of Reproduction*. Submitted (8/05). Denied.

Shrier, Paul and **Cahleen Shrier**. "Acts of Mercy as Mimesis: John Wesley's Theology of Sanctification and Mirror Neurons," *The Journal of Pastoral Theology*, 15:1, Spring 2005.

Paul Shrier and **Cahleen Shrier**. Human Embryonic Stem Cell Research and Christian Community Ethics: An Old Testament Investigation. *Perspectives on Science and Christian Faith*, Vol. 58 No. 1 March 2006, pp. 37-46.

**Cahleen Shrier**. Anatomy of a Science Scholar. IN: *Designing, Implementing, and Sustaining a Research-Supportive Undergraduate Curriculum: A Compendium of Successful Curricular Practices from Faculty and Institutions Engaged in Undergraduate Research*. Editors: Kerry K. Karukstis and Timothy Elgren, Council on Undergraduate Research, Spring 2007.

**Cahleen Shrier**. Grant Writing for Undergraduates. IN: *Designing, Implementing, and Sustaining a Research-Supportive Undergraduate Curriculum: A Compendium of Successful Curricular Practices from Faculty and Institutions Engaged in Undergraduate Research*. Editors: Kerry K. Karukstis and Timothy Elgren, Council on Undergraduate Research, Spring 2007.

Paul Shrier, Ph.D, **Cahleen Shrier**, Ph.D. "Suffering With Others": A Neuroscience Perspective on Wesley's Acts of Mercy. *APU Life*, Winter 2006.

Paul Shrier and **Cahleen Shrier**. "Mr. Wesley, If my brain makes me do it why do I need the Holy Spirit?" *Pneuma*, accepted - Spring 2009.

## **Presentations**

Charles A. Ducsay and **Cahleen M. McNutt**, Do Prostaglandins Regulate Circadian Uterine Activity In The Pregnant Rhesus Macaque? Society For The Study Of Reproduction. Seattle, Washington, 1988.

**Cahleen M. McNutt** and Charles A. Ducsay, Catecholamines and Circadian Uterine Activity in The Pregnant Rhesus Macaque, Society For Gynecologic Investigation, 36th Annual Meeting; San Diego, California; March 1989.

C.A. Ducsay, L.M. Harvey, **C.M. McNutt** and R.D. Gilbert. Effects of Nicardipine on Uteroplacental Blood Flow in the Rhesus Macaque. Society For Gynecologic Investigation, 36th Annual Meeting; San Diego, California; March 1989.

**Cahleen M. McNutt**, Lisa M. Harvey, Kanchan M. Kaushal, and Charles A. Ducsay, Effect of Catecholamines On In Vitro Prostaglandin (PG) Production By Amnion and Chorion From The Rhesus Macaque at 65-158 Days Gestation. Society For Gynecologic Investigation, 37th Annual Meeting, St. Louis, Missouri, March 1990.

C.A. Ducsay, S.M. Yellon, D.L. Hess, L.M. Harvey, and **C.M. McNutt**, Regulation of Myometrial And Endocrine Rhythms by Photoperiod In The Pregnant Rhesus Macaque. Society For Gynecologic Investigation, 37th Annual Meeting, St. Louis, Missouri, March 1990.

**Cahleen M. McNutt**, and Charles A. Ducsay, Lack of Effect of Adrenergic Agonist on In Vitro Prostaglandin (PG) E<sub>2</sub> Production By Late Gestation Amnion (AM) From The Rhesus Macaque. Society For Gynecologic Investigation, 38th Annual Meeting; San Antonio, Texas, March 1991.

**Cahleen M. McNutt** and Charles A. Ducsay, Adrenergic Agonist And Antagonist On In Vitro Prostaglandin E<sub>2</sub> (PGE<sub>2</sub>) Production By Amnion From The Rhesus Macaque at 153-154 Days Gestation.

**Cahleen McNutt**, and Stephen J. Lye, Induction Of Preterm Labour In Sheep Is Associated With An Increase in Connexin-43 Transcripts In The Myometrium.

**Cahleen M. McNutt**, Model For Activation Of Genes During Labor: Changes In Connexin-43 mRNA. Annual Research day, Toronoto General Hospital; Toronto, Ontario, Canada; May 10, 1991.

**Cahleen M. McNutt**, Model For Activation Of Genes During Labor: Changes In Connexin-43 mRNA. Annual Research day, Toronoto General Hospital; Toronto, Ontario, Canada; May 13, 1992.

**Cahleen M. McNutt** and Stephen J. Lye. Changes in Ovine Myometrial Connexin43 in ACTH-induced Labor. The Society for the Study of Fetal Physiology, 19th annual meeting; Aug 1992; Ontario, Canada.

Stephen J. Lye, Teresa Petrocelli, **Cahleen M. McNutt**, Lely Chow, and Diana L. Lefebvre, Molecular Regulation Of The Myometrium During Labour. August 1-6, 1993.

**Cahleen Shrier**, Jeff Harvey, John Erickson, Amy Sell, Mehr Filmardirossian, Rebecca S. Gay, Cynthia N. Berry, and Lisa M. Harvey. The Effect of Androstenedione Treatment on Pregnant Rats. 32nd Annual Meeting of the Society for the Study of Reproduction, July 31 - August 4, 1999, in Pullman, Washington.

**Cahleen Shrier**. The Crucifixion of Christ from a Biological Point of View. APU Faith Integration Faculty Forum, Azusa, California, Spring 2001.

**Cahleen Shrier**. Panelist: Collaborating on Research and Publications. APU Faculty Forum: " Be Published by January", July 19, 2001, Azusa, California.

**Cahleen M. McNutt Shrier**, Jeffrey W. Harvey, Ame C. Sell, Mher V. Filmardirossian, John T. Erickson, Rebecca S. Gay, Cynthia N. Berry, and Lisa M. Harvey. Maternal and Fetal Estrogen levels After Administration of Androstenedione to Pregnant Rats. 35th Annual Meeting of the Society for the Study of Reproduction, July 28 - August 1, 2001, in Ottawa, Ontario, Canada.

**Cahleen Shrier**, Malgorzata Mlynarczyk, Kanchan M Kaushal, Lubo Zhang and Charles Ducsay. Chronic Cocaine Treatment in the Pregnant Rat Mimics the Effect of Chronic Hypoxia on Myometrial Contractility in Vitro. 49th Annual Meeting of the Society for Gynecologic Investigation, March 20-23, 2002, Los Angeles, CA.

**Cahleen Shrier**, Malgorzata Mlynarczyk, Kanchan M Kaushal and Charles Ducsay. Chronic Hypoxia Elevates Myometrial and Serum Interleukin Concentrations in Rats During Late Gestation. 49th Annual Meeting of the Society for Gynecologic Investigation, March 20-23, 2002, Los Angeles, CA.

**Cahleen Shrier**. Stem Cell Issues, What Does It Mean to be Human?, Science Consortium of California Christian Universities, La Sierra University, La Sierra, CA, April 11, 2002.

**Cahleen Shrier**. The Physiology of Christ's Crucifixion. Waterloo Pentecostal Assembly, Waterloo, Ontario, Canada, 9:00am and 10:45am, March 24, 2002.

**Cahleen Shrier** and Paul Shrier. Stem Cells: Developing a Christian Perspective. Covina Assembly of God Church Adult Sunday School Class, Covina, California, June 23 and 30, 2002.

Charity Plaxton-Hennings, **Cahleen Shrier** Sarah Wong-Goodrich, Emily Reed, Jeremy Brown, and Sara Nicastro. Stress and Immune Functioning in College Students. The Western Psychological Association Convention, Phoenix, AZ. April 2004.

**Cahleen Shrier** and Paul Shrier. A Correlation Theology of Embryonic Stem Cell Research. American Scientific Affiliation, Trinity Western University, Langley, British Columbia, Canada, July 24, 2004.

**Cahleen Shrier** and Paul Shrier. Practical Theology of Stem Cell Research. Chapel, Azusa Pacific University. Sept, 2004.

Charity Plaxton-Hennings, Jeremy Brown, Damaris Flores, Elizabeth Houser, Jabneel Lopez, Tacie Vaughn, Lelie Justis David Tubman, Jada Magana, Emely Perez, Emily Reed and **Cahleen Shrier**. Stress, Religiosity, and Immune Functioning. The Western Psychological Association Convention, Portland, OR. April 2005.

Paul Shrier & **Cahleen Shrier**. John Wesley's Acts of Mercy and Mirror Neurons, Theology and Brain Sciences Working Group at the Annual Meeting of Society of Pastoral Theology, Chicago, Illinois, July, 2005.

Paul Shrier and **Cahleen Shrier**. Mr. Wesley, If My Brain Makes Me Do It, Why Do I Need the Holy Spirit? The Lewis Wilson Institute for Pentecostal Studies, Vanguard University of Southern California, Costa Mesa, CA, Sept. 23, 2005.

Robert Vouga, **Cahleen Shrier**, Charity Plaxton Hennings, Pamala Cone, and Paul Shrier. Faith Integration into the topic of Stress in Education, Biology, Psychology, Nursing, and Theology. Cynosure: A Guide for Faculty; Azusa Pacific University, Azusa, CA; May 12, 2006.

Paul Shrier and **Cahleen Shrier**. What Does It Mean That I Care? An Integrated New Testament Theology and Neuroscience Study of Empathy. Society of Pastoral Theology, Denver, CO, June 16, 2006.

**Cahleen Shrier**. Vegetative State and Consciousness. City of Hope Patient's Rights and Ethics Committee, Duarte, CA, April 16, 2007.

Paul and **Cahleen Shrier**. Faith Integration and Empathy. One Soul One Mind Faith Integration Symposium, Azusa Pacific University, May 11, 2007.

## **My Students' Undergraduate Research Presentations**

John Erickson and **Cahleen Shrier**. Androstenedione and its Affects on Birth Weight. 21st Annual West Coast Undergraduate Research Conference in Biological Sciences, Point Loma, CA, April 1996.

Emma Barnum, **Cahleen Shrier** and James White. Chromium Levels in the Hair of Male Rats Measured by Atomic Absorption. 21st Annual West Coast Undergraduate Research Conference in Biological Sciences, Point Loma, CA, April 1996.

John Bartsch, Silva Salibian, Lisa Harvey and **Cahleen Shrier**. Does Bombesin Contract the Pregnant Rat Uterus? 22nd Annual West Coast Undergraduate Research Conference in Biological Sciences, Los Angeles, CA; May 1997.

Mher Filmadirossian, John Erickson, Lisa Harvey and **Cahleen Shrier**. Intrauterine Growth Retardation Induced by Androstenedione Administration to Pregnant Rats. 22nd Annual West Coast Undergraduate Research Conference in Biological Sciences, Los Angeles, CA; May 1997.

John Bartsch, Silva Salibian, Lisa Harvey and **Cahleen Shrier**. Myometrial Responsiveness to Bombesin in the Pregnant Rat. Southern California Conference on Undergraduate Research, California State University, Los Angeles, CA; Nov 1997.

John Bartsch, Lisa Harvey and **Cahleen Shrier**. Effects of Agonist and Antagonists on Bombesin Induced Contractions of the Pregnant Rat. 23<sup>rd</sup> Annual West Coast Biological Sciences Undergraduate Research Conference, San Francisco, May. 1998.

Ame Sell, Lisa Harvey and **Cahleen Shrier**. The Effects of a Pharmacological Increase in Androstenedione to Pregnant Rats on Fetal Development. 23<sup>rd</sup> Annual West Coast Undergraduate Research Conference in Biological Sciences, San Francisco, May. 1998.

Rebecca S. Gay and Cynthia N. Berry (advisor: **Cahleen Shrier**). Validation of An Estradiol Assay Kit For Use In Adult And Fetal Rat Plasma. 24<sup>th</sup> Annual West Coast Biological Sciences Undergraduate Research Conference, Irvine, California, May 1, 1999. (Won one of the top three poster awards.)

Jonathan Funk, Jeff Harvey, **Cahleen Shrier**, and Lisa Harvey. Ability of Bloodhounds To Follow An Individual's Scent on Mixed Trails. 24<sup>th</sup> Annual West Coast Biological Sciences Undergraduate Research Conference, Irvine, California, May 1, 1999.

Catheryn Briones and **Cahleen Shrier**. Can Bloodhounds Discriminate Between the Scents of Identical Twins? - A Preliminary Study. 25<sup>th</sup> Annual West Coast Biological Sciences Undergraduate Research Conference, Point Loma, California, April 29, 2000.

Jonathan Funk and **Cahleen Shrier**. Comparisons of Microbial Populations Confined to Three Epidermis Regions: Forehead, Axilla and Pubic. 25<sup>th</sup> Annual West Coast Biological Sciences Undergraduate Research Conference, Point Loma, California, April 29, 2000.

Tracy Day and **Cahleen Shrier**. T-Helper Cells and the Possible Relation to Multiple Sclerosis. Science and Math Scholars Program Research Seminar, Azusa. California, April 11, 2002.

Minhthy Nguyen and **Cahleen Shrier**. Experiemntal Allergic Encepalomyelitis: The Animal Model for Multiple Sclerosis. Science and Math Scholars Program Research Seminar, Azusa, California, April 11, 2002.

Kristyn Mannoia, Charity Plaxton-Hennings and **Cahleen Shrier**. Stress, IgA and Coping Mechanisms in College Students. 30<sup>th</sup> Annual West Coast Biological Sciences Undergraduate Research Conference, Santa Clara, California, April 30, 2005.

Lauren Horvath, Charity Plaxton-Hennings and **Cahleen Shrier**. Salivary Cortisol Levels and Immune Functioning in College Students. 30<sup>th</sup> Annual West Coast Biological Sciences Undergraduate Research Conference, Santa Clara, California, April 30, 2005.

### **My Students' Undergraduate Research Publications**

Tracy Day. T-Helper Cells and the Possible Relation to Multiple Sclerosis. Student Online Academic Research: A Publication of the Science Consortium of California Christian Universities, <http://soar.pagehere.com>, Spring 2002.

Minhthy Nguyen. Experimental Allergic Encepalomyelitis: The Animal Model for Multiple Sclerosis. Student Online Academic Research: A Publication of the Science Consortium of California Christian Universities, <http://soar.pagehere.com>, Spring 2002.

## **Grants**

APU Accomplished Scholar Award-Spring 1996 (3 units)  
APU Accomplished Scholar Award-Summer 1999 (3 units)  
APU Accomplished Scholar Award-Summer 2002 (3 units)

APU Faculty Research Grant-1995-1996  
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APU Faculty Research Grant-1999-2000  
APU Faculty Research Grant- 2001-2002  
APU Faculty Research Grant- 2004-2005  
APU Faculty Research Grant- 2005-2006

APU Faculty Development Intern Grant – 1997-1998  
APU Faculty Development Creative Teaching Grant - 2008-2009

APU CREV grant - June 2006

Lilly Vocation Mini Grant: "Christians as Scientists" 2007-2008

## **Awards**

Teaching Excellence and Campus Leadership Award – Azusa Pacific University, May 1, 1999  
Sabbatical – Spring 2001