

EXTERNAL EXAMINER for Bioscience with Chemistry



Name: Prof. Dr. Dwight D. Dimaculangan

Education Qualifications:

San Diego State University, San Diego, CA
September 1981 - June 1983

Hiram College, Hiram, OH, September 1983 - June 1986
B.A. in Psychobiology, June 1986

University of South Carolina, SC, August, 1986 - March, 1992
Ph.D. in Molecular and Cell Biology, Genetics, June 1992

University of Pennsylvania School of Medicine, Philadelphia, PA
Postdoctoral training, March 1992 - August 1994

Positions:

1986-1988	Teaching Assistant, Department of Biological Sciences, University of South Carolina (USC)
1987-1992	Research Assistant, Department of Biological Sciences, USC
1992-1993	Postdoctoral Research Assistant, University of Pennsylvania School of Medicine (UPSM)
1993-1994	Postdoctoral Research Fellow (NIH Fellowship Grant), UPSM
1994-2000	Assistant Professor, Department of Biology, Winthrop University, (WU)
2000-2005	Associate Professor, Department of Biology, WU
2002-2015	Director of Undergraduate Research for the College of Arts and Sciences, WU
2005-2015	Professor, Department of Biology, WU and Director of the Undergraduate Research Office, WU
2011-2015	Interim Chair of the Biology Department, WU
2015-present	Professor, Department of Biology, WU
2015-present	Chair of the BIOLOGY Department, WU

OTHER PROFESSIONAL EXPERIENCE:

1998 – present	Institutional Liaison to the Council on Undergraduate Research
2004 – present	Founding member of the Network of Directors of Undergraduate Research Experiences (NDURE)
2006 – present	Councilor, Undergraduate Research Project Directors Division, Council on Undergraduate Research (CUR), elected spring of 2006
2006 – present	University representative to the National Conference on Undergraduate Research and the Big South Undergraduate Research Symposium Advisory Committee
2006	Served as a member of a Reaffirmation Committee on a site visit for the Southern Association of Colleges and Schools, Commission on Colleges
2007 – present	Advisory panel member for an NSF STEP funded project by the College of Education and the

PROFESSIONAL HONORS:

- 1997 Presidential Citation, Winthrop University, In Recognition of Exceptional Service: *investigator for NSF Grant, for successfully applying for a National Science Foundation Instrumentation and Laboratory Improvement Grant, which has allowed the biology, chemistry, and physics departments to make innovative advances in integrating instructional technology into the science curriculum, and for conceiving, writing, and implementing the projects funded by NSF.*
- 2002 Presidential Citation, Winthrop University, In Recognition of Exceptional Service: *for his role in the renovation and reoccupation of the SIMS Science Building: establishing and prioritizing classroom and laboratory technology recommendation; working numerous hours identifying departments' needs; training faculty on how to use the equipment for classroom teaching; and supervising the installation of all equipment.*
- 2004 Presidential Citation, Winthrop University, In Recognition of Exceptional Service: *biology, for attending to his new responsibilities as director of undergraduate research in the College of Arts and Sciences, for serving as chair of a faculty advisory committee on undergraduate research, for helping to promote undergraduate research by producing an abstract booklet of undergraduate research projects, for encouraging and supporting faculty and student undergraduate research, and for working to educate Winthrop's arts and sciences community about research trends occurring locally, regionally, and nationally, all of which have allowed Winthrop to excel in undergraduate research.*
- 2006 Presidential Citation, Winthrop University, In Recognition of Exceptional Service: *Recipient of the IdeA Network of Biomedical Research Excellence grant: for his leadership and initiation in developing the biomedical grant proposal which resulted in Winthrop receiving a \$3.8 million grant; for their commitment to ensuring that the university's science students have access to the most technologically advanced equipment and resources; and for their ongoing dedication to providing science majors with unique experiences including faculty-led and student-assisted research participation, and the opportunity to attend and present their research findings at conferences.*

PUBLICATIONS/ BOOKS:

- Pravda K. Stoeva-Popova, Dwight Dimaculangan, Mariana Radkova, Zlatka Vulkova (2007).
Towards Cytoplasmic Male Sterility in Cultivated Tomato, *Journal of Agricultural, Food and Environmental Sciences*. 1 (1): 1-13.
- Choinski, J.S., Dimaculangan, D.D., and Barwick, J. (2005) *Molecular and Cell Laboratory Manual*. Indo American Books, Kingsway Camp, India.
- Kimberly S. Wilson, Pravda Stoeva-Popova, and Dwight D. Dimaculangan (2004).
Characterization of LpSK6: a Lycopersicon GSK-3/SHAGGY-like protein kinase.
Biotechnol. and Biotechnol. Eq. 18(3):20-26
- Kimberly S. Wilson, Pravda Stoeva-Popova, and Dwight D. Dimaculangan (2004).
Identification of a GSK-3/SHAGGY-like protein kinase homologue from *Lycopersicon peruvianum*. *Report of the Tomato Genetics Cooperative* 54:16-18.
- Gianniny, C., Stoeva-Popova, P., and Dimaculangan, D.D. (2004). Mitochondrial-specific RAPD analysis in the Lycopersicon CMS system. *Report of the Tomato Genetics Cooperative* 54:43-47.

Gianinny, C., Stoeva, P, Cheely, A., Dimaculangan, D.D. (2004) RAPD Analysis of mtDNA from Tomato Flowers Free of Nuclear DNA Artifacts. *Biotechniques* 36:772-776.

Dimaculangan, D.D.. *Appendix 1 – Writing a Lab Report*. In *Biology 151 Laboratory Manual* (2002) Department of Biology and Philip Shelp, Thomson Custom Publishing, Stamford, CT.

Dimaculangan, D.D.. *Appendix 2 – Using the Microscope*. In *Biology 151 Laboratory Manual* (2002) Department of Biology and Philip Shelp, Thomson Custom Publishing, Stamford, CT.

Dimaculangan, D.D., Mitchell, P.L., Chism, J.L., Schmidt, J.M., Rogers, W., and Johnston, J.W. (2001) Investigative Biology: A Multidimensional Approach to Teaching Biology: Injecting Analytical Thought into the Scientific Process, in Practicing Science: The Investigative Approach in College Science Teaching. The National Science Teachers Association. NTSA press, Arlington ,VA. pp.54-60.

Dimaculangan, D.D., Mitchell, P.L., Chism, J.L., Schmidt, J.M., Rogers, W., and Johnston, J.W. (2000) Investigative Biology: A Multidimensional Approach to Teaching Biology: Injecting Analytical Thought into the Scientific Process. *Journal of College Science Teaching* 29(5):330-336.

Dimaculangan, D.D. (1998) DNA Science Laboratory Manual. Department of Biology, Winthrop University.

Schulemovich, K., Dimaculangan, D.D., Katz, D., and Lazar, M.A. (1995) DNA Bending by Thyroid Hormone Receptor: Influence of Half-Site Spacing and RXR. *Nucleic Acids Res.* 23:811-818.

Dimaculangan, D.D., Chawla, A., Boak, A., Kagan, H.M., and Lazar, M.A. (1994) Retinoic Acid Prevents Down-Regulation of ras Recision Gene/Lysyl Oxidase, an Early Event in Adipocyte Differentiation. *Differentiation* 58:47-52.

Chawla, A., Schwarz, E.J., Dimaculangan, D.D., and Lazar, M.A. (1994) Peroxisome Proliferator-Activated Receptor y: Adipose-Predominant Expression and Early Induction During Adipocyte Differentiation. *Endocrinology* 135:798-800.

Asadi, F., Dimaculangan, D.D., and Berger, F.G. (1994) Androgen Induction of Gene Expression in Primary Epithelial Cells of the Mouse Kidney. *Endocrinology* 134:1179-1187.

Rhee, M., Dimaculangan, D.D., and Berger, F.G. (1991) Androgen Modulation of DNA Binding Factors in the Mouse Kidney. *Mol. Endo.* 5:564-572.

CURRENT FUNDING:

Patrick Owens, James Johnston (Co-PIs); Dwight D. Dimaculangan, Laura N. Glasscock, Lammi K. Robin, Chasta L. Parker, Takita Sumter, Kristi M. Westover (Project Investigators);
and Clifton P. Calloway (Core Lab Director). (2005-2010) Molecular Biomedical Research Initiative at Winthrop University as part of the IDeA Networks of Biomedical Research Excellence proposal for South Carolina (Winthrop's request = \$1,625,000).

Kathryn J Wilson, Mary Crowe, Sharon J Hamilton and Anthony C. Stamatoplos. (2006-2009). National Science Foundation, DUE – CCLI-Expansion, *Using Electronic Portfolios to Assess Student Learning as a Result of Undergraduate Research*. Dimaculangan role - Senior Personnel-Local Project Director, (\$500,000).

Malinda Jones, Christopher Bennett, and Dwight Dimaculangan (2008). EPSCOR/IDeA Microarray Opportunity Award. *Microarray Analysis of Oxidative Stress in a 3-D Cardiac Tissue Culture System* (\$8,000).

AWARDS/GRANT PROPOSALS (Only Funded Grants are Shown):

Dwight Dimaculangan. Hypoxia Damage in a 3D Cardiomyocyte Tissue Culture System. Submitted to the Winthrop Research Council, February 5, 2007. \$4,516.40- Funded (\$3,080).

Dwight D. Dimaculangan and Jessica E. Cloy. (2005) Embryonic Myocyte Responses to Injury using a Bioengineered 3D Culture System. Winthrop Research Council: Faculty Research with Student Co-Investigator Grant, 2005 (\$6,742).

Kristi Westover, Chasta Parker, and Dwight Dimaculangan. (2004) Interdisciplinary Curriculum Enhancement: LI-COR Genomics. LI-COR Biosciences Genomics Education Matching Fund Program (\$41,250 with Winthrop match of \$49,850).

Mary Crowe and Dwight D. Dimaculangan (2004) Request for PKAL \$5,000 Leadership Funds. Project Kaleidoscope (PKAL), Washington, DC (\$5,000).

Dwight D. Dimaculangan and William C. Olson. (2004) Mitochondrial RAPD Analysis of the Tomato (*Lycopersicon*) CMS System. Winthrop Research Council Grants (\$6,651).

William Rogers, Dwight D. Dimaculangan, Janice Chism, and James Johnston. Summer Workshop to Train Lab Instructors for the New General Education Biology Course, BIOL 150/151. Winthrop Research Council (\$3,000).

Dwight D. Dimaculangan, Janice Chism, and Jessica Cloy (Student Co-Investigator). (2002) Determination of Population Dynamics of de Brazza's Monkeys. Winthrop University Research Council (\$4,233).

Pravda Stoeva (PI) and Dwight D. Dimaculangan (Co-PI). (2001) Differential Gene Expression in CMS and Fertility Restored *Lycopersicon* Hybrids. National Research Initiative Competitive Grants Program. United States Department of Agriculture (\$75,000).

Chism, Janice L. (PI) and Dwight D. Dimaculangan (Co-PI). (2000) Determination of Population Dynamics in de Brazza's Monkeys (*Cercopithecus neglectus*) by mtDNA Comparison. Research Grant from the Winthrop University Research Council (\$2,200).

Dimaculangan, Dwight, D. (PI) and Andrew McFadden (Co-Investigator). (2000) Identification of Genes Controlling Flatworm Regeneration. Research w/Student Grant from the Winthrop University Research Council (\$2,480).

Johnston, James (PI), Janice Chism (Co-PI), Dwight Dimaculangan (Co-PI), and William Rogers (Co-PI). New Introductory Biology Course for Nonmajors. Curriculum Enhancement Grant from the Winthrop University Research Council, 2000 (\$4,732).

Dwight D. Dimaculangan (PI) and Pravda Stoeva (Co-PI). (1999) Identification of nuclear genes regulating the restoration of male fertility in *Lycopersicon* interspecific hybrids. *Research and Instructional Improvement Award*, Winthrop University (\$1,500).

Dwight D. Dimaculangan (PI) and Suchitra Bhardwaj (Co-PI). (1998) Identification of Nuclear Hormone Receptors in Flatworms (Planaria). *Faculty Research and Instructional Improvement Award*, Winthrop University (\$2,000).

Dwight D. Dimaculangan (PI), Julian P.S. Smith III, James W. Johnston, Paula L Mitchell, Janice Chism, William Rogers, Kenneth Gregg, and John Schmidt. (1996) Computer Work Stations for Investigative Laboratories. *Instrumentation and Laboratory Improvement Award*, National Science Foundation (\$17,258 matching funds, total budget of \$34,516).

Dwight D. Dimaculangan (PI). (1996) Using the Technique of Differential Display to Study Zebrafish Development. *Faculty Research and Instructional Improvement Award*, Winthrop University (\$1,843).

Dwight D. Dimaculangan (PI). (1995) DNA Sequencing Apparatus. *Faculty Instructional Improvement Award*, Faculty Research Council, Winthrop University (\$1,690).

Dwight D. Dimaculangan (1994) *Individual National Research Service Award*, Postdoctoral Fellowship Grant, National Institutes of Health.

Dwight D. Dimaculangan (1990) *Student Travel Award*, The American Society for Cell Biology.

RECENT PRESENTATIONS:

Dwight Dimaculangan, Virginia Derryberry, and Jennifer Cook. Wearing Many Hats: Being an Undergraduate Research Director. Presented at the 2006 Council on Undergraduate Research National Conference, DePauw University, June 22, 2006.

Mary Crowe, Evelyn Goldsmith, John Cavitt, Rick Heldrich, Mark Zrull, Kathryn Wilson, Dwight Dimaculangan, Rebecca Pyles, Karl Sienerth. Developing a Network of Directors of Undergraduate Research Experiences (NDURE). Faculty and Administrators' Network Session, National Conference on Undergraduate Research, Washington and Lee University & the Virginia Military Institute, April 22, 2005.

PUBLISHED ABSTRACTS:

Cloy, J., Goodwin, R. Dimaculangan, D. (2006) Cryoinjury Models of Myocardial Infarction in a 3D Cardiac Cell Culture System. Submitted to the 46th Annual Meeting of the American Society for Cell Biology, San Diego, CA, December 9-13, 2006.

Dimaculangan, D.D., Sapough-Wilson, K., Gianniny, C. and Stoeva, P.(2004) Characterization of Cytoplasmic Male Sterility in the Tomato System, Genus *Lycopersicon*. South Carolina Academy of Sciences Meeting, April 16, Charleston, SC

Gianniny, C., Stoeva, P., Cheely, A., and Dimaculangan, D.D. (2003) Unique Banding Patterns by Mitochondrial-Specific RAPD Analysis in the *Lycopersicon* Cytoplasmic Male Sterility System. Abstract L366. *43rd Annual Meeting of The American Society for Cell Biology*, San Francisco, CA, December 13-17.

Johnson, B.S., Dimaculangan, D.D., McFadden, A., Bhardwaj, S., Smith, J. III. (1999) Identification of a LIM-Domain Homologue, LMO-1, in Regenerating Flatworms, *Dugesia dorotocephala*. *ASB Bulletin* 46: 240.

McFadden, W. A., Johnson, B., Smith III, J.P., Bhardwaj, S. and Dimaculangan, D.D. (1999) Identification of a LIM-

Domain Homologue, LMO-1, in Regenerating Flatworms, *Dugesia*

dorocephala. *The Eighth South Carolina Statewide Research Conference*. Wild Dunes, Isle of Palms, SC., January 3-5.

McFadden, W. A., Wilson, R.S. and Dimaculangan, D.D. (1998) Identification of Retinoid-Regulated Genes in Early Zebrafish Development by Differential Display. *The Seventh South*

Carolina Statewide Research Conference. Wild Dunes, Isle of Palms, SC, January 4-6.

Chism, J., Dimaculangan, D.D., Gregg, K., Houk, R., Johnston, J., Mitchell, P., Rogers, W., Schmidt, J., and Smith III, J.P. (1996) Teaching Undergraduates How to Do Research: A

Cornerstone of the Curriculum, *Council on Undergraduate Research National Meeting Workshop*.

Rogers, W., Chism, J., Dimaculangan, D.D., Gregg, K., Johnston, J., Mitchell, P., Schmidt, J., and Smith III, J.P. (1996) The Ideal Investigative Laboratory. Council on Undergraduate

Research National Meeting Workshop.

Dimaculangan, D.D., Rhee, M., and Berger, F.G. (1990) Functional and Structural Analysis of the Androgen-Regulated RP2 Gene Promoter. *J. Cell Biol.* 111: 121a.

MENTORED THESES

Jessica Cloy (2006) Injury Models of MI in a 3D Cardiac Culture System.

William Charles Olson (2005) Mitochondrial-Specific RAPD Analysis of Tomato (*Lycopersicon*) CMS System.

Christine Leigh Gianniny (2003) Development of Mitochondrial-Specific RAPD Analysis to Identify Mitochondrial Chromosome Rearrangements in the Genus *Lycopersicon*.

Kimberly Sapough-Wilson (2003) GSK-3/Shaggy-like Kinase Homologs in the *Lycopersicon* Cytoplasmic Male Sterility System.

Allen Zillmer (2002) Microbial Characterization of an Industrial Petroleum Hydrocarbon Bioremediation System.

Andrew Wilson McFadden (2001) The Identification of Differentially Expressed Genes in Flatworm Regeneration.

W. Alex McFadden (1999) The Roles of Zinc-Finger Proteins in Development and Differentiation.

R. Steven Wilson (1998) Identification of Nuclear Hormone Receptors During Early Zebrafish Development.

MEMBERSHIPS IN PROFESSIONAL ORGANIZATIONS:

American Association for the Advancement of Science

American Society for Cell Biology

Council on Undergraduate Research (CUR), Councilor and Institutional Liaison

Sigma Xi, The Scientific Research Society

Bioethics Resource Group

Network of Directors of Undergraduate Research Experiences (NDURE)