

CURRICULUM VITAE
Roger L. Miesfeld, Ph.D.

Professor

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EDUCATION:

Bachelor of Science (1977)

Dept. of Biology, San Diego State University, San Diego, California USA

Master of Science (1979)

Dept. of Biology, San Diego State University, San Diego, California USA

Title of Thesis: "Cell Cycle Analysis of Aging Tomato Root Tips"

Laboratory of Dr. David C. Shepard

Doctor of Philosophy (1983)

Dept. of Biochemistry, Stony Brook University (SUNY), Stony Brook, New York USA

Title of Dissertation: "Molecular Analysis of Species-Specific rDNA Transcription"

Laboratory of Dr. Norman Arnheim

PROFESSIONAL EXPERIENCE:

1983 - 1987

Postdoctoral Fellow

Dept. of Biochemistry & Biophysics, U.C. San Francisco

Laboratory of Dr. Keith R. Yamamoto

1987 - 1993

Assistant Professor

Depts. of Biochemistry and Molecular & Cellular Biology, University of Arizona

1993 - 1998

Associate Professor

Depts. of Biochemistry and Molecular & Cellular Biology, University of Arizona

1998 - now

Professor

Depts. of Chemistry & Biochemistry (formerly Biochemistry & Molecular Biophysics)
and Molecular & Cellular Biology, Member of Bio5 Institute, Member of Graduate
Interdisciplinary Program in Entomology & Insect Science, University of Arizona

2012 - now

Co-Chair, Department of Chemistry & Biochemistry, University of Arizona

SELECTED HONORS AND AWARDS:

1983 - 1986

Fellow of the Jane Coffin Childs Memorial Fund for Medical Research

1986 - 1989

Special Fellow of the Leukemia Society of America

1989 - 1994

Scholar of the Leukemia Society of America

1994

Chair, Gordon Conference on Cancer, Colby Sawyer College

1999 - 2001

Chair, American Cancer Society, Tumor Biology/Endocrinology Review Panel

2005 - 2008

Member, American Cancer Society Executive Council for Extramural Grants

2012

University of Arizona Honors College Faculty Excellence Award

SOCIETY MEMBERSHIPS:

American Chemical Society

American Association for the Advancement of Science

American Society of Tropical Medicine and Hygiene

American Society of Biochemistry and Molecular Biology

PUBLICATIONS:**Peer-Reviewed**

- Arnheim, N., Seperack, P., Banerji, J., **Miesfeld, R.**, and Marcu K. (1980). Mouse rDNA nontranscribed spacer sequence are found flanking immunoglobulin genes and elsewhere throughout the genome. *Cell* 22:179-185.
- Marcu, K., Arnheim, N., Banerji, J., Penncavage, N., Seperack, P., Lang, R., **Miesfeld, R.**, Harris, L. and Greenberg, R. (1981). Studies on the nature and germ-line stability of DNA sequences flanking the immunoglobulin heavy-chain constant-region genes. *Cold Spring Harbor Symp. Quant. Biol.* 45:899-911.
- Miesfeld, R.**, Krystal, M and Arnheim, N. (1981). A member of a new repeated sequence family which is conserved throughout eukaryotic evolution is found between the human delta and beta globin genes. *Nuc. Acids Res.* 9:5931-5947.
- Miesfeld, R.** and Arnheim, N. (1982). Identification of the in vivo and in vitro origin of ribosomal RNA transcription. *Nuc Acids Res.* 10:3933-3949.
- Miesfeld, R.** and Arnheim, N. (1984). Species-specific rDNA transcription is due to promoter-specific binding factors. *Mol. Cell. Biol.* 4:221-227.
- Miesfeld, R.**, Sollner-Webb, N., Croce, C. and Arnheim, N. (1984). The absence of a human-specific ribosomal DNA transcription factor leads to nucleolar dominance in mouse-human hybrid cells. *Mol. Cell. Biol.* 4:1306-1312.
- Miesfeld, R.**, Okret, S., Wilkstrom, A., Wrangé, O., Gustafsson, J. and Yamamoto, K. (1984). Characterization of a steroid hormone receptor gene and mRNA in wild-type and mutant cells. *Nature* 312:779-781.
- DeFranco, D., **Miesfeld, R.**, Rusconi, S. and Yamamoto, K.R. (1985). Additive effects of two distinct activators upon a single enhancer element. In "Genetic Elements Regulating Initiation of Transcription in Eukaryotes", Y. Gluzman, ed., Cold Spring Harbor Press, New York, pp 132-137.
- Miesfeld R.**, Rusconi, S., Okret, S., Wikstrom, A-C, Gustafsson, J-A and Yamamoto, K.R. (1985). Preliminary analyses of the glucocorticoid receptor gene and its expression: A DNA binding protein essential for hormone-dependent transcriptional enhancement. In:"Sequence Specificity in Transcription and Translation", R. Calender and L. Gold, eds., Alan R. Liss Inc., New York, pp. 535-545.
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- Godowski, P., Rusconi, S., **Miesfeld, R.**, and Yamamoto, K. (1987). Glucocorticoid receptor mutants that are constitutive activators of transcriptional enhancement. *Nature* 325:365-368.
- Vanderbilt, J., **Miesfeld, R.**, Maler, B. and Yamamoto, K. (1987). Intracellular receptor concentration limits glucocorticoid-dependent enhancer activity. *Mol. Endocrin.* 1:68-74.
- Rusconi, S., **Miesfeld, R.**, Godowski, P., Vanderbilt, J., Maler, B. and Yamamoto, K.R. (1987). Functional analysis of cloned glucocorticoid receptor sequences. In: "RNA Polymerase and the Regulation of Transcription", W. Reznikoff, ed., Elsevier Science Publishing, New York, pp. 257-266.
- Distelhorst, C. and **Miesfeld, R.** (1987). Characterization of glucocorticoid receptors and glucocorticoid receptor mRNA in human leukemia cells. *Blood* 69:750-756.
- Miesfeld, R.**, Godowski, P., Maler, B. and Yamamoto, K. (1987). Glucocorticoid receptor mutants that define a small region sufficient for enhancer activation. *Science* 236:423-427.
- Miesfeld, R.**, Sakai, D., Inoue, A., Schena, M., Godowski, P. and Yamamoto, K. (1988). Glucocorticoid receptor sequences that confer positive and negative transcriptional regulation. In: "Steroid Hormone Action", G. Ringold, ed., Alan Liss Publishers, New York, pp. 193-200.
- Rosewicz, S., McDonald, A., Maddux, B., Goldfine, I., **Miesfeld, R.**, and Logsdon, C.D. (1988). Mechanism of glucocorticoid down-regulation by glucocorticoids. *J. Biol. Chem.* 263:2581-2584.

- Briehl, M. M., Flomerfelt, F.A., Wu, X-P, and **Miesfeld, R.** (1990). Transcriptional analyses of steroid-regulated gene networks, *Mol. Endocrin.* 4:287-294.
- Rundlett, S., Wu, X-P., and **Miesfeld, R.** (1990) Functional characterizations of the androgen receptor confirm that the molecular basis of androgen action is transcriptional regulation. *Mol. Endocrin.* 4:708-714.
- Dieken, E. Meese, E., and **Miesfeld, R.** (1990) nt^l glucocorticoid receptor transcripts lack sequences encoding the amino terminal transcriptional modulatory domain. *Mol. Cell. Biol.* 10:4574-4581.
- Dowd, D.R., MacDonald, P.N., Komm, B.S., Haussler, M.R. and **Miesfeld, R.** (1991) Evidence for early induction of calmodulin gene expression in lymphocytes undergoing glucocorticoid-mediated apoptosis. *J.Biol.Chem.* 266:18423-18426.
- Briehl, M.M. and **Miesfeld, R.** (1991) Isolation and characterization of transcripts induced by androgen withdrawal and apoptotic cell death in the rat ventral prostate. *Mol.Endocrin.* 5:1381-1388.
- Dieken, E.S. and **Miesfeld, R.** (1992) Transcriptional transactivation functions localized to the glucocorticoid receptor N terminus are necessary for steroid induction of lymphocyte apoptosis. *Mol. Cell. Biol.* 12:589-597.
- Dowd, D.R. and **Miesfeld, R.** (1992) Evidence that glucocorticoid- and cAMP-induced apoptotic pathways in lymphocytes share distal events. *Mol. Cell. Biol.* 12:3600-3608.
- Rundlett, S. Gordon, D. and **Miesfeld, R.** (1992) Characterization of a panel of rat prostate epithelial cell lines immortalized in the presence or absence of androgens, *Exp. Cell Res.* 203:214-221.
- Dowd, D.R., MacDonald, P.N., Komm, B.S., Haussler, M.R. and **Miesfeld, R.** (1992) Stable expression of the calbindin-D28k cDNA interferes with the apoptotic pathway in lymphocytes, *Mol. Endocrin.*, 6:1843-1848.
- Flomerfelt, F.A., Briehl, M.M., Dowd, D.R., Dieken, E.S. and **Miesfeld, R.** (1993) Elevated glutathione S-transferase gene expression is an early event during steroid-induced lymphocyte apoptosis, *J. Cell. Physiol.*, 154:573-581.
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- Scaraffia, P.Y., Zhang, Q., Thorson, K., Wysocki, V.H. and **Miesfeld, R.** (2010) Differential ammonia metabolism *Aedes aegypti* fat body and midgut tissues, *J. Insect. Physiol.*, 56:1040-1049.
- Zhou, G., Isoe, J., Day, W.A., and **Miesfeld, R.** (2011) α -COPI transport function is required for rough endoplasmic reticulum whorl formation in mosquito midgut epithelial cells, *PLoS ONE*, 6:e18150.
- Isoe, J., Collins, J., Badgandi, H., Day, W.A., and **Miesfeld, R.** (2011) Defects in the COPI vesicle transport system cause blood feeding induced mortality in Yellow Fever mosquitoes, *Proc. Nat. Acad. Sci.*, 108:E211-E217.
- Rascon, A., Isoe, J., Gearin, J. and **Miesfeld, R.** (2011) In vitro activation and enzyme kinetic analysis of recombinant midgut serine proteases in the Dengue vector mosquito, *BMC Bioc.* 12:43.
- Alabaster, A., Isoe, J., Zhou, G., Lee, A., Murphy, A. and **Miesfeld, R.** (2011) Deficiencies in acetyl-CoA carboxylase and fatty acid synthase differentially affect blood meal metabolism and egg production in *Aedes aegypti*. *Insect. Bioc. Mol. Biol.*, 41:946-955.
- Mack, D.J., Isoe, J., **Miesfeld, R.L.** and Njardarson, J.T. (2012) Distinct biological effects of Golgicide A derivatives on larval and adult mosquitoes, *Bioorg. Med. Chem. Lett.*, 22:5177-5188.
- Isoe, J., Stover, W., Miesfeld, R.B. and **Miesfeld, R.L.** (2013) COPI-mediated blood meal digestion in vector mosquitoes is independent of midgut ARF-GEF and ARF-GAP regulatory activities., *Insect. Bioc. Mol. Biol.*, 43:732-739.
- Isoe, J., Mack, D.J., Njardarson, J.T., and **Miesfeld, R.L.** Biochemical inhibitors of COPI vesicle transport have differential metabolic effects on Diptera insects, *in preparation*.

Reviews and Books:

- Miesfeld, R.** (1989). The structure and function of steroid receptor proteins. *CRC Critical Reviews in Biochemistry and Molecular Biology*, 24:101-117.
- Miesfeld, R.** (1990). Molecular genetics of corticosteroid action. *American Rev. Resp. Diseases*, 141:S11-S17.
- Miesfeld, R.** (1994) Biochemistry of glucocorticoid action. Chapter 95B *In Endocrinology*, Third Edition, L. J. DeGroot, ed., W.B.Saunders Co., Publishers, New York.
- Gordon, D. and **Miesfeld, R.** (1994) Immortalization of rat ventral prostate epithelial cells using SV40 T-antigen, *in Cell Biology: A Laboratory Handbook*, J. Celius, ed., Academic Press Inc., New York, 1:251-257.
- Bloom, J. and **Miesfeld, R.** (1995) Molecular mechanism of glucocorticoid action. *In Severe Asthma: pathogenesis and clinical management*, S. Szefer and D.Y. Leung, eds., eds. Marcel Dekker, Inc. Publishers, New York, N. Y.
- Miesfeld, R.** and J. Bloom (1997) Glucocorticoid receptor structure and function. *In Topical glucocorticoids in asthma - mechanism and clinical actions*, R. Schleimer, W. Busse and P. O'Byrne, eds., Marcel Dekker Publishers, N.Y., pp. 3-27.
- Miesfeld, R.** (1997) Hormone receptors. *In Principles and practice of genitourinary oncology*, D. Raghavan et al. eds., J.B. Lippincott Co., New York., pp. 427-435.
- Miesfeld, R.** (2000) Glucocorticoid Action: Biochemistry. *In Endocrinology*, 4th Edition L. J. DeGroot and J.L. Jameson, eds., W.B.Saunders Co., Publishers, New York, pp. 1647-1654.
- Chauhan S, Childers, R., Himes, J., Pierce, A., Sykes, S., Pond, K., Kunz, S. and **Miesfeld R.** (2006) Characterization of the FERM domain protein EHM2 in human cancer cells. *In "Adhesion and Cytoskeletal Molecules in Metastasis,"* A.E. Cress and R.B. Nagle (eds.), 91–102, Springer.
- Matthews, H, Freedland, R. and **Miesfeld, R.** (1997) "Biochemistry: A short course", John Wiley & Sons, publisher, New York, N. Y., 505 pages.
- Miesfeld, R.** (1999) "Applied Molecular Genetics", John Wiley & Sons, publisher, New York, N.Y., 293 pages.
- Scaraffia, P.Y. and **Miesfeld, R.**, (2011) "Chapter 93: Insect Biochemistry and Hormones," *Encyclopedia of Biological Chemistry*, Eds. M. D. Lane and W. Lennarz, Elsevier Publishers, in press.
- Miesfeld, R.** and McEvoy, M., "Foundations in Biochemistry", WW Norton Publishers, New York, Hard copy and e-book formats, ~1200 pages (textbook), to be published December 2014.

RESEARCH INTERESTS

Mosquitoes are human disease vectors that transmit pathogens through blood feeding. One of these disease vectors is the *Aedes aegypti* mosquito, which have rapidly expanded their habitat and are contributing annually to 500,000 cases of Dengue hemorrhagic fever. On an even greater scale, *Anopheline* mosquitoes account for 250 million cases of malaria/yr, with up to 1 million deaths annually. The most common adult insecticides used for mosquito control are pyrethroids, which inhibit evolutionarily conserved sodium channels in the mosquito nervous system. Although these compounds have proven to be effective, mosquito resistance is an increasing problem and there is a pressing need to develop the next generation of safe and effective agents. Since blood meal feeding creates a unique metabolic challenge as a result of the extremely high protein and iron content of blood, it is possible that interfering with blood meal metabolism could provide a novel control strategy for mosquito born diseases. *Our long term goal is to identify small molecule inhibitors that block blood meal metabolism in vector mosquitoes, resulting in feeding-induced death of the adult female, or a significant reduction in egg viability, as a strategy to control vector mosquito populations in areas of high disease transmission.*

Overview of blood meal metabolism in *Aedes aegypti* mosquitoes. Newly emerged female mosquitoes feed on nectar for several days until they are able to take their first blood meal. The blood meal is required for *Ae. aegypti* egg development and results in the deposition of ~100 fertilized eggs within ~60 hours of feeding. In order to produce this many eggs, blood meal metabolism requires efficient retrieval of nutrients and rapid excretion of toxic ammonia. A female *Ae. aegypti* female mosquito weighs ~2.5 mg and can consume a blood meal of 2 μ l in ~60 seconds. The blood meal is equal in mass to her own body (including the water, protein, and lipid). This would be equivalent to a 125 lb women drinking a 12 gallon smoothie that contains 25 lbs of hamburger meat, 0.5 lb of butter, and 2 tbs of sugar. Can you imagine not only drinking this mega smoothie in less than a minute, but completely digesting it, and then excreting all of the toxic waste products in just 24 hours? The female *Ae. aegypti* mosquito does this up to five times in her lifetime, resulting in the production of 500+ mosquito eggs over a two week period.

Role of COPI vesicle transport in blood fed mosquitoes. Based on recent data showing that COPI vesicle transport is involved in cellular processes beyond Golgi-ER retrograde protein trafficking, we disrupted COPI functions in the Dengue mosquito *Ae. aegypti* to interfere with blood meal digestion. Surprisingly, we found that decreased expression of the COPI coatomer protein led to 89% mortality in blood fed mosquitoes by 72 hr post-feeding, compared to 0% mortality in control dsRNA injected blood fed mosquitoes and 3% mortality in COPI dsRNA injected sugar fed mosquitoes. Similar results were obtained using dsRNA directed against five other COPI coatomer subunits. We found that COPI defects disrupt epithelial cell membrane integrity, stimulate premature blood meal excretion, and block induced expression of several midgut protease genes. In order to study the role of COPI transport in ovarian development, we injected COPI dsRNA after blood feeding, and found that while blood digestion was normal, follicles in these mosquitoes were significantly smaller by 48 hr post-injection and lacked eggshell proteins. Together, these data show that COPI functions are critical to mosquito blood digestion and egg maturation, a finding that could also apply to other blood feeding arthropod vectors.

Identification and characterization of next generation mosquitocides. We have used a highly efficient RNAi knockdown strategy to interrogate biochemical processes in blood fed *Ae. aegypti* mosquitoes. Based on our recent finding that blood fed vector mosquitoes are extremely sensitive to defects in COPI vesicle transport, but not COPII or clathrin vesicle transport, we initiated two new projects aimed at developing small molecule inhibitors of the mosquito COPI vesicle transport system. One of these projects investigates the biochemical role of the COPI regulatory proteins GBF1, Arf1, and Arf4 in controlling COPI processes in midgut, fat body, and ovary tissues to elucidate the underlying mechanisms of GBF1 regulatory functions in blood meal metabolism. A second project focuses on chemical synthesis and biochemical characterization of novel GBF1 inhibitors related to golgicide A (GCA), which could eventually be combined with other COPI inhibitors to mediate blood-feeding induced mortality. We propose that the unique dynamics of blood meal metabolism will permit effective disruption of the gonotrophic cycle in mosquitoes at much lower inhibitor concentrations than needed to interfere with homeostatic metabolism in non-target organisms.

RESEARCH FUNDING**Active Research Grants:**

None

Pending grants:

1. National Institutes of Health (R01)
"Metabolic Regulation of Metabolic Flux in Blood Fed Mosquitoes"
Roger L. Miesfeld, Principal Investigator (20% effort)
Submitted in October 2013, requested \$1,857,438.

Planned grants:

1. National Institutes of Health (R01)
"Biochemical Regulation of Eggshell Formation in Dengue Mosquitoes"
Roger L. Miesfeld, Principal Investigator (20% effort)
Planned submission in February 2014.

Prior Grant Awards (1987 - present)Federal

1. **National Institutes of Health** (RO1-GM40738)
"Molecular Biology of Hormone-Regulated Cytolysis".
Roger L. Miesfeld, Ph.D., Principal Investigator (30% effort)
July 1, 1988 - June 30, 1991. Award of \$273,779 direct costs.
2. **National Institutes of Health** (RO1-GM40738) - compet. renewal
"Molecular Biology of Hormone-Regulated Cytolysis"
Roger L. Miesfeld, Principal Investigator (30% effort)
July 1, 1991 - June 30, 1995. Award of \$366,749 direct costs.
3. **National Institutes of Health** (R01-GM40738) - compet. renewal
"Glucocorticoid Regulation of Thymocyte Apoptosis"
Roger L. Miesfeld, Principal Investigator (30% effort)
July 1, 1995 - June 30, 1999. Award of \$466,749 direct costs.
4. **National Science Foundation** (DCB-9105007)
"Transcriptional Control of Steroid Gene Networks"
Roger L. Miesfeld, Ph.D., Principal Investigator (25% effort)
August 15, 1991 - December 31, 1994. Award of \$167,115 direct costs.
5. **National Science Foundation** (IBN-9421604)
"Transcriptional Control of Steroid Gene Networks"
Roger L. Miesfeld, Ph.D., Principal Investigator (25% effort)
April 1, 1995 - March 31, 1998. Award of \$172,227 direct costs.
6. **National Cancer Institute** (PO-CA1794)
Medical Oncology Program Project (MOPP)
Sydney Salmon, M.D., PI, Roger L. Miesfeld, Ph.D., Co-Investigator, Project IIID (15% effort).
December 1, 1988 - November 30, 1992. RLM lab: \$122,000 direct costs.
7. **National Cancer Institute** (PO-CA1818)
Sydney Salmon, M.D., Principal Investigator
Roger L. Miesfeld, Ph.D., Co-investigator, Project II (10% effort)
April 1, 1990 - March 31, 1994, RLM lab: \$74,250 direct costs
8. **National Institutes of Health** (T32-GM08659)
BMCB Graduate Student Training Grant

Roy Parker, Ph.D., Principal Investigator
 Roger L. Miesfeld, Ph.D., Co-Principal Investigator
 July 1, 1997 - June 30, 2002, Award of \$313,712 total direct costs.

9. **National Institutes of Health (RO1-HL60201)**
 "Control of Eosinophil Apoptosis by Intracellular Signals"
 Roger L. Miesfeld, Principal Investigator (30% effort)
 April 1, 2000 - March 31, 2005, award of \$700,000 direct costs.
10. **National Institutes of Health (R21-GM072628-01A1)**
 "Regulation of Cellular Growth by HspBP1"
 Vince Guerriero, Principal Investigator, Roger L. Miesfeld, Co-Investigator (5% effort)
 April 1, 2006 - March 31, 2009, total award of \$300,000 direct costs.
11. **National Institutes of Health (R01-AI031951)**
 "Regulation of Digestion in Blood-sucking Insects"
 Roger L. Miesfeld, Principal Investigator (25% effort)
 February 1, 2006 - January 31, 2011 (no cost extension to 1/31/2013)
 Total award of \$1,150,000 direct costs.
12. **National Institutes of Health (R01-AI046541)**
 "Regulation of Energy Metabolism in Insects"
 Roger L. Miesfeld, Principal Investigator (25% effort)
 February 1, 2006 - January 31, 2011 (no cost extension to 9/30/2012)
 Total award of \$1,125,000 direct costs.

State

1. **Arizona Disease Control Research Commission**
 "Molecular Determinants of Androgen-Independent Prostate Cell Growth", Roger L. Miesfeld, Ph.D., Principal Investigator.
 July 1, 1990 - June 30, 1993. Award of \$67,500 direct costs.

Foundations

1. **American Cancer Society** Seed Grant (U of A awardee)
 "Genetic Analyses of Tissue-Specific Hormone Responses"
 Roger L. Miesfeld, Ph.D., Principal Investigator
 December 10, 1987 - August 31, 1988. Award of \$10,000 direct costs.
2. **American Cancer Society**, (NP-702)
 "Androgen Control of Prostate-Specific Gene Expression"
 Roger L. Miesfeld, Ph.D., Principal Investigator (25% effort)
 July 1, 1989 - June 30, 1991. Award of \$152,000 direct costs.
3. **American Cancer Society**, (BE72863)
 "Androgen-Regulated Gene Expression in Prostate Cells"
 Roger L. Miesfeld, Ph.D., Principal Investigator (25% effort)
 January 1, 1994 - December 31, 1996. Award of \$160,000 direct costs.
4. **American Cancer Society** (IRG-81387)
 Institutional Research Grant for Cancer Research
 Roger L. Miesfeld, Ph.D., Principal Investigator
 July 1, 1996 - June 30, 1999, \$210,000 direct costs.
5. **Leukemia Society of America**, Special Fellowship

- "Glucocorticoid Receptor Genes in Steroid-Resistant Lymphoma Cells"
 Roger L. Miesfeld, Ph.D., Principal Investigator
 November 1, 1987 - June 30, 1989. Award of \$57,000 direct costs.
6. **Leukemia Society of America**, Society Scholar
 "Mechanisms of Lymphoma Cell Killing by Glucocorticoids"
 Roger L. Miesfeld, Ph.D., Principal Investigator
 July 1, 1989 - June 30, 1994. Award of \$200,000 direct costs.
7. **The Flinn Foundation (GA-0602)**
 "Molecular Biology of Hormone-Regulated Cytolysis"
 Roger L. Miesfeld, Ph.D., Principal Investigator
 January 1, 1987 - October 31, 1988. Award of \$23,898 direct costs.
8. **Jack Doyle Memorial Fund**
 Development funds for molecular studies of lymphomas
 Roger L. Miesfeld, Ph. D., Principal Investigator, \$50,000 direct costs.
 July 1, 1990 - present (\$10,000 annual direct costs).
9. **Michael Landon Children's Cancer Fund** Seed Grant
 "Glucocorticoid Induction of Lymphocyte Cell Death"
 Roger L. Miesfeld, Ph.D., Principal Investigator
 July 1, 1993 - June 30, 1994. Award of \$7,500 direct costs.

Industrial Funding

1. **Astra Draco Pharmaceuticals**
 "Molecular Mechanism of Budesonide-Mediated Inhibition of NFkB Signaling"
 Roger L. Miesfeld, Ph.D., Principal Investigator (5% effort).
 April 1, 1997 - March 31, 1999. Award of \$100,000 direct costs.

Awards as a Sponsor of Postdoctoral Fellows

1. **National Cancer Institute**
 Cancer Biology Training Grant (CA-09213)
 Competitively awarded to Margaret Briehl, Ph.D., February 1, 1988 - January 31, 1991.
 Competitively awarded to Diane Dowd, Ph.D., February 1, 1990 - July 31, 1990.
2. **Cancer Research Institute**
 Competitively awarded to Diane Dowd, Ph.D.
 August 1, 1990 - July 31, 1993. Salary award of \$67,000 direct costs.
3. **Del Webb Foundation for Molecular Biology Research**
Xi-Ping Wu, M.D., Postdoctoral Fellow
 July 1, 1988 - April 30, 1990. Salary award of \$35,000 direct costs.
Debra Gordon, Ph.D, Postdoctoral Fellow
 October 1, 1992 - June 30, 1993. Salary supplement of \$10,000 direct costs
4. **Institutional Cancer Research Seed Grant**
Xi-Ping Wu, M.D., Postdoctoral Fellow
 January 1, 1989 - August 30, 1989. Award of \$8,500 for supplies.
5. **National Institutes of Health (NRSA) GM14662**
Debra Gordon, Ph.D., Postdoctoral Fellow
 October 14, 1993 - October 13, 1994. Stipend and allowance of \$32,500

PATENTS

1. Provisional Patent "Tricyclic Mosquitocides and Methods of Making and Using Thereof" by Jon Njardarson, Jun Isoe, and **Roger Miesfeld**. Filed on July 9, 2013, on behalf of the Arizona Board of Regents. USSN 61/844,0007.

RESEARCH TRAINEESPh.D. Students (as Dissertation Director)

- Ellen Dieken (Bioc. dept.) Spring 1988 - Fall 1991 (Ph.D. degree awarded).
 - became a postdoc in Keith Fournier's lab at UW Hutchinson Cancer Center.
- Frank Flomerfelt (MCB dept.) Summer 1988 - Fall 1994 (Ph.D. degree awarded).
 - became a postdoc in Ron Schwartz's lab at the NIH, currently an Assistant Research Scientist, Immunology Division, National Cancer Institute, NIH.
- Steve Rundlett (MCB dept.) Spring 1989 - Spring 1993 (Ph.D. degree awarded).
 - became a postdoc in Michael Grunstein's lab at Mol. Biol. Inst., UCLA, CA. currently a research scientist at Atherys, Inc., Minneapolis, Minnesota.
- Lie Chen (Bioc. dept.) Spring 1990 - Summer 1992 (Masters Degree awarded).
 - became a research technician at Selectide Corporation, Tucson, AZ.
- Nancy Chamberlain (Bioc. dept.) Spring 1990 - Fall 1994 (Ph.D. degree awarded).
 - became a postdoc in Edwin Krebs' lab at University of Washington.
- Mark Chapman (Bioc. dept.) Spring 1991 - Fall 1995 (Ph.D. degree awarded).
 - became a postdoc in Inder Verma's lab at the Salk Institute, La Jolla, CA. currently a research scientist at Ligand Pharmaceuticals in La Jolla, CA.
- Mark DeBoer (Bioc dept.) Summer 1996 - Summer 1998 (M.S. degree awarded).
 - became a medical student at UA Medical School, Tucson. currently a pediatric endocrinologist in private practice, Portland, OR.
- Dave Askew (MCB dept.) Spring 1992 - Fall 1998 (Ph.D. degree awarded).
 - became a postdoc in Gary Silverman's lab at Children's Hospital, Harvard. currently a research assistant professor, University of Pittsburgh Medical School.
- Unsal Kuscuoglu (MCB dept.) Winter 1994 - Summer 2000 (Ph.D. degree awarded).
 - became a postdoc in Ute Francke's lab at Stanford University. currently a research associate in the Department of Surgery, Stanford University.
- Dave Whitaker (MCB dept.) Spring 1993 - Summer 2001 (Ph.D. degree awarded).
 - became a research scientist at Tragen Pharmaceuticals in San Diego. currently an Assistant Professor, Vaccine Research Institute, San Diego.
- Tom Leptich (MCB dept.) Summer 1995 - Summer 2001 (Ph.D. degree awarded).
 - became a postdoc at Torrey Pines Institute for Molecular Studies, San Diego.
 - currently a scientific liason for 3M Corporation, Medical Division, San Diego, CA.
- Jorge Zamora (Bioc dept.) Summer 2006 - Winter 2007 (Ph.D. degree awarded)
 - currently works for the Dept. of Homeland Security.
- Alberto Rascon (BCP program) Fall 2008 – Fall 2010 (Ph.D. degree awarded)
 - currently a postdoctoral fellow at UC San Francisco.

M.S. Students (accelerated BS/MS five year program)

- Amy Alabaster (Bioc dept.) Fall 2008 – Spring 2010
 - currently a research technician in Vector Biology at the NIH

Research Associates

- Margaret Briehl, (Ph.D., University of Arizona) February 1988 - February 1991
 - currently Professor of Pathology, University of Arizona
- Xi-Ping Wu, (M.D., Beijing University) July 1988 - June 1990
 - currently a Board Certified M.D. (Family Practice) in Laguna, CA
- Diane Dowd, (Ph.D., Vanderbilt University) September 1989 - September 1992
 - currently Assistant Professor of Pharmacology, Case Western Reserve
- Debra Gordon, (Ph.D., University of Arizona) November 1990 - October 1994
 - currently General Counsel Attorney, Roche Pharmaceuticals, Tucson
- Ning Qu, (M.D., Hebei Medical College) November 1993 - November 1994
 - currently a Assistant Research Scientist, Animal Sciences, U. Arizona
- Sanjay Chauhan, (Ph.D., Jawaharlal Nehru U.) April 2000 – 2004
 - currently in private business in Tucson, Arizona

Research Associates (cont.)

- Jorge Zamora, (Ph.D., University of Arizona), June 2006 – December 2008
 - currently working for U.S. Department of Homeland Security
 Patricia Scaraffia, (Ph.D., U. Nacional Cordoba, Argentina) June 2006 – December 2010
 - currently a research assistant professor in Dr. Vicki Wysocki's lab, University of Arizona
 Guoli Zhou, (Ph.D., Sun Yat-sen University, China), July 2007 – July 2010
 - currently a research associate at Michigan State University
 Jun Isoe, (Ph.D., University of Arizona) June 2006 - present

High School Students

- Philip Favor (Santa Rita High School) Summer 1993
 Aaron Wallach (Canyon Del Oro High School Honor Student), 2002 - 2003
 Jesus Hernandez (Sunnyside High School) Fall 2006 - Spring 2007
 Logan Mauney (University High School) Summer 2007 – Fall 2008
 Kathryn Kerscher (Tucson High Magnet School) Summer 2008
 Eduardo Hernandez (Tucson High School) Summer 2009

Undergraduate Researchers

- Wen Hsiang Lee (Bioc. dept.) Fall 1988- Spring 1989
 Susan Weaver (Bioc. dept.) Spring 1989 - Spring 1990
 Brenda Heaton (MCB dept.) Spring - Fall 1989
 Ken Teter (Hughes Research Program) Summer 1990
 Debbie Long (Bioc. dept.) Fall 1990 - Spring 1991
 Kristy Powers (Bioc. dept.) Summer 1992 - Spring 1993
 Ericka Driver (Hughes Research Program) Summer 1993 - 1995
 Catalina Apostol (Hughes Research Program) Summer 1994 - Spring 1996
 James Reynolds (Bioc. dept.) Spring 1995 - Fall 1995
 Mehul Patel (Bioc. dept.) Summer 1995 - Spring 1996
 Rudy Serino (Bioc dept.) Fall 1995 - Spring 1996
 Troy Smith (Bioc dept.) Fall 1997 - Spring 1998
 Sam Ng (Bioc dept.) Fall 1997 - Summer 1998
 Mao Zhou (Bioc dept.) Fall 1977 - Summer 1998
 Mark O'Connell (Hughes Research Program) - Summer 1998
 Gideon Eckhouse (Bioc. dept.) Fall 1998 - Spring 1999
 Robert Sandoval (Bioc. dept.) Fall 1998 - Spring 1999
 George Sen (Bioc dept.) Fall 1998 - Spring 2000
 Jonathen Tan (Hughes Research Program) - Summer 2000
 Craig Leach (Bioc dept.) - Summer 2000 - Spring 2001
 Srikant Bykadi (Bioc dept.) - Summer 2000 - Spring 2002
 Nick Strand (Bioc dept.) - Fall 2000 - Spring 2001
 Greg Grobmeier (MCB dept.) - Fall 2000 - Spring 2002
 Stephanie Berman (Bioc dept.) - Fall 2001 - Spring 2002
 Jeff Way (Bioc dept.) - Fall 2001 – Spring 2002
 Jordan Roberts (MCB dept.) - Fall 2001 - Spring 2003
 Greg Martin (Bioc dept.) - Fall 2001 - Spring 2003
 Steve Tilley (Bioc dept.) Fall 2002 – Spring 2003
 Sara Mobley (MCB dept.) Fall 2002 – Spring 2003
 Jha'Nae Stoffer (MCB dept.) Fall 2002 – Spring 2003
 Andrea Pierce (Bioc dept.) Spring 2003 – Spring 2003
 Kelli Davis (NSF Research Program) Summer 2003
 Ryan Childers (ASU Honors Program) Summers 2003, 2004
 Jennifer Himes (Bioc dept.) Summer 2004 - Spring 2005
 Mina Switzer (Bioc dept.) Fall 2004
 Lucy Chemodurow (MCB dept.) Spring 2005
 Matt Belshe (Bioc dept.) Fall 2004 - Spring 2006

Undergraduate Researchers (cont.)

Shahin Dabestani (MCB dept.) Fall 2005 – Spring 2006
 Sabrina Sykes (UBRP) Summer 2005 - Fall 2006
 Christina Jelly (UBRP) Summer 2006 - Spring 2008
 Taylor Dupuy (Bioc dept.) Fall 2006 - Spring 2007
 Bhaskar Ganguly (Bioc dept.) Fall 2005 - Spring 2007
 Danielle Boomer (Bioc dept.) Fall 2006 - Spring 2007
 Roman Abramov (Bioc dept.) Fall 2006 - Spring 2007
 Michelle Brandon (Bioc dept./UBRP) Summer 2006 – Spring 2008
 Amy Alabaster (UBRP/UBRP) Summer 2006 – Spring 2009
 Aneesha Hossain (Bioc dept.) Summer 2006 - Summer 2007
 Daniel Triester (Bioc dept.) Summer 2006 - Summer 2007
 Kelsey Thorson (Physiol. dept.) Fall 2006 - Spring 2007
 Ryan Golden (NSF REU program) - Summer 2007
 Nick Sharp (Bioc dept.) Fall 2007
 Beryl Jones (Bioc dept.) Spring 2006 – Spring 2008
 Denny Scaria (NSF REU program) - Summer 2008
 James Morton (Bioc dept.) Summer 2006 – Spring 2009
 Brianna Kolody (Bioc dept./UBRP) Fall 2006 - Spring 2009
 Matthew Clark (Bioc dept.) Fall 2007 - Spring 2009
 Sindhu Pandurangi (Bioc dept.) Fall 2008 - Spring 2009
 Ada Lee (Bioc. dept./UBRP) Summer 2009 – Spring 2011
 Ashleigh Murphy (NSF REU) Summer 2009
 Johnathon Gearin (Bioc dept.) Summer 2009
 Jennifer Collins (Bioc dept.) Fall 2009 – Spring 2011
 Weston Stover (Bioc dept./UBRP) Fall 2009 – Spring 2011
 Daniel Whitfield (Bioc dept.) Summer 2010 - Spring 2011

TEACHING*Medical School Biochemistry (BIOC 801)*

Fall 1988 - Molecular Biology Lectures (20 lecture hours)
 Fall 1989 - Molecular Biology Lectures (12 lecture hours)
 Spring 1989 - Molecular Biology Lectures (8 lecture hours)

Medical School Molecular and Cellular Biology (MCB 801)

Fall 1990 - Molecular Biology Lectures (20 lecture hours)
 Fall 1991 - Molecular Genetics of Cancer (2 lecture hours)

Biochemistry Graduate Core Course (BIOC 572)

Fall 1991 - Biological Regulation (25 lecture hours)
 Fall 1992 - Biological Regulation (25 lecture hours)
 Fall 1993 - Biological Regulation (25 lecture hours)

Biochemistry Graduate Core Course (BIOC 572)

Fall 1994 - Biological Regulation (8 lecture hours)
 Fall 1995 - Biological Regulation (25 lecture hours)

Molecular Biology (MCB 511)

Spring 1992 - Graduate student discussion sessions (8 hours)
 Spring 1993 - Graduate student discussion sessions (8 hours)
 Spring 1994 - Graduate student discussion sessions (8 hours)

Applied Molecular Genetics (Bioc 471/571)

Fall 1999 - Upper division discussion course (30 lecture hours)
 Fall 2000 - Upper division discussion course (30 lecture hours)
 Fall 2001 - Upper division discussion course (30 lecture hours)

Opportunities in Biochemistry (Bioc 195G)

Fall 2007 - Colloquium to introduced students to biochemistry (2 sections)
 Fall 2008 - Colloquium to introduced students to biochemistry (2 sections)

Undergraduate Majors Biochemistry (Bioc 462)

Spring 1995 - Discussion sections and Honors section (60 hours)
 Spring 1996 - Discussion sections and Honors section (60 hours)
 Spring 1997 - Discussion sections and 16 lecture hours (62 hours)
 Spring 1998 - Discussion sections and 16 lecture hours (62 hours)
 Fall 2002 - Discussion sections
 Spring 2006 - Discussion section and 14 lecture hours (62 hours)

Undergraduate Non-Majors Biochemistry (Bioc 460)

Spring 1999 - Protein and Metabolic Biochemistry (25 lecture hours)
 Spring 2000 - Protein and Metabolic Biochemistry (25 lecture hours)
 Spring 2001 - Protein and Metabolic Biochemistry (25 lecture hours)
 Spring 2002 - Protein and Metabolic Biochemistry (25 lecture hours)
 Spring 2004 - Protein and Metabolic Biochemistry (22 lecture hours)
 Spring 2005 - Protein and Metabolic Biochemistry (22 lecture hours)
 Summer 2006 - Protein and Metabolic Biochemistry (20 lecture hours)
 Spring 2008 - Protein and Metabolic Biochemistry (20 lecture hours)
 Fall 2008 - Protein and Metabolic Biochemistry (20 lecture hours, two sections)
 Fall 2009 - Protein and Metabolic Biochemistry (20 lecture hours, two sections)
 Fall 2010 - Protein and Metabolic Biochemistry (20 lecture hours, two sections)
 Spring 2011 - Protein and Metabolic Biochemistry (20 lecture hours, two sections)

Undergraduate Non-Majors Biochemistry (Bioc 385)

Fall 2011 – Metabolic Biochemistry (42 lecture hours)
 Spring 2012 – Metabolic Biochemistry (42 lecture hours)
 Spring 2013 – Metabolic Biochemistry (42 lecture hours)

Introduction to Biochemical Research (Bioc 296B)

Spring 2009 – Seminar course and small group discussions (15 hours)
 Spring 2010 – Seminar course and small group discussions (15 hours)
 Fall 2010 – Seminar course and small group discussions (15 hours)
 Spring 2012 – Seminar course and small group discussions (15 hours)
 Fall 2012 – Seminar course and small group discussions (15 hours)
 Spring 2013 – Seminar course and small group discussions (15 hours)

UNIVERSITY COMMITTEESBiochemistry Department (Chemistry & Biochemistry as of July 2009) -

Graduate Studies committee (1988 - 1996)
Chair, Graduate Studies committee (1992 - 1996)
 Department Head Five-year Review committee (1992)
Chair, Curriculum committee (1996 – 2000, 2002 - 2009)
 Department of Biochemistry Executive committee (1997 – 2000, 2007)
Chair, Post-tenure Review Teaching Criteria committee (1997)
Chair, Faculty search committee (2000)
 BMB Undergraduate Committee (2000-2004)
 MS/BS degree selection committee (2003 - 2008)
Chair, Faculty search committee for COM position (2004 - 2005)
Chair, Department Head Five-year Review committee (2004)
Chair, BMB Department Student Awards committee (2005 - 2006)
 Biochemistry faculty P&T committee (2008 - 2009)
Chair, Biochemistry faculty ad hoc P&T committee (2009)
Chair, CBC Peer Review/Promotions committee (2009)
Chair, Non-majors biochemistry curriculum committee (2009-2010)
Chair, CBC Faculty Search Committee in Biochemistry (2009-2010)
 CBC Undergraduate Programs Committee (2010 – present)
 CBC Faculty Space Committee (2010 – 2011)

Biochemistry Department (Chemistry & Biochemistry as of July 2009) – cont.

CBC Executive Committee (2011 – present)
CBC Faculty Search Committee in Biochemistry (2011)
CBC Faculty Search Committee in all areas (2012)

Molecular and Cellular Biology Department -

Graduate Curriculum subcommittee, (1990)
Lindholm Chair Search committee (1990, 1992)

College of Science -

Faculty Governance Committee (1995 - 1999)
Biochemistry Department Head search committee (1996 - 1998)
Faculty Senate, COS representative (2002 – 2004)
Mouse Functional Genomics oversight committee (2004)
Dean's Audit of Peer Reviews Committee (2007 - 2010)

Arizona Cancer Center -

Graduate Admissions committee, Ph.D. program (1988 - 1991)
Selection Committee for pre- and post-doctoral trainees (1991 - present)
Chair, Micro. & Immun./Can. Ctr. faculty search (1990)
Faculty Search committee, Radiation Oncology (1990)
Director, Molecular and Computational Biology Core (1993 - 1994)
Construction subcommittee - Research facilities (1993)
Cancer Biology Program Executive Committee (1993 - 2007)

College of Medicine -

Student Appeals committee (1989 - 1993)
Institutional Cancer Grant Review committee (1990 - 2000)
Chair, Institutional Cancer Grant Review committee (1995 – 2000)
Chair, BRSG Grant Review committee (1993 - 1994)
Advisory Committee for the Division of Biotechnology (1992 - 2004)
Chair, Review Committee on Cell Sorting Facility (1993)
Physiology Department Head search committee (2004)
Arizona Research Labs Ad Hoc Promotion and Tenure Committee (2006)

University Level Committees -

Advisory Committee to the Provost on Honorary Degrees (2012)
Advisory Board for “Campaign on Common Sense” (2013-present)

SCHOLARY ACTIVITIES

Organization of National/International Meetings

Meeting Vice-Chair, 1993 Gordon Research Conference on Cancer, Newport, R.I.
Meeting Chair, 1994 Gordon Research Conference on Cancer, Colby-Sawyer, New Hampshire.
Session Co-Chair, 2007 American Society of Tropical Medicine and Hygiene, Philadelphia.

Grant Review Committees (National)

NCI P01 Site Visit Review, LSU Medical School (1990)
Ad Hoc Member American Cancer Society Grant Review Committee (1991)
NIH P01 Site Visit Review, U. Texas, Galveston (1993)
Ad Hoc Reviewer, Biochemical Endocrinology Study Section, NIH (1995)
Ad Hoc Member American Cancer Society Grant Review Committee (1996)
Ad Hoc Member American Cancer Society Grant Review Committee (1997)
Member, American Cancer Society, Tumor Biochemistry Endocrin. Review Comm. (1998 - 2004)
Chair, American Cancer Society TBE Grant Review Committee (2000 - 2001)
Ad Hoc Member, NIH Biochemical Endocrinology Study Section (2000)

Grant Review Committees (National) cont.

Member, American Cancer Society Executive Council for Extramural Grants (2005 - 2009)
Ad Hoc Member, NIH ZRG Committee for Vector Biology Study Section (2013)

Journal Editorial Boards

Molecular Endocrinology (1992 - 1995)
Apoptosis (1995 - present)
Open Access Insect Physiology (2009 – present)

Invited Lectures at other Institutions and at **Scientific Meetings** (1988 - present)

- 1988 Department of Radiation Oncology, University of Chicago, IL
Department of Biochemistry & Molecular Biology, Mayo Clinic, MN
Sibia Corporation, Salk Institute, San Diego, CA
- 1989 Oncology Research Division, University of Texas, Austin
Gordon Conference on Medicinal Chemistry, Colby-Sawyer, NH
International Congress on Histochemistry, Wash. D.C.
International Society of Respiratory Diseases, Vienna, Austria
- 1990 Dept. of Biology, North Texas State University
Ligand Pharmaceuticals, San Diego, CA
Dept. of Reproductive Biology, Johns Hopkins University
Rockefeller University, Molecular Biology Division
- 1991 Dept. of Hematology/Oncology, Case Western Reserve
Western Society of Endocrinology, Carmel, CA
Dept. of Human Genetics, University of Michigan, Ann Arbor
- 1992 Dept. of Biochemistry and Molecular Biology, U. Oklahoma, Oklahoma City
Gordon Conference on Cancer, Salve Regina College, Newport, RI
- 1992 **Gordon Conference on Hormone Action, Kimball Union Academy, NH**
Leukemia Society of America National Meeting, Phoenix, AZ
Workshop on Safety of Inhaled Steroids, Astra Draco, Eze, France
- 1993 Dept. of Biology, University of California at Santa Barbara
Dept. of Biochemistry, University of Southern California, Norris Cancer Center
Dept. of Molecular Biology, Texas Tech University Medical School, Lubbock
- 1993 **AACR Conference on Mechanism of Retinoid and Steroid Action, Banff, Alberta**
Ligand Pharmaceuticals, San Diego, Calif.
Dept. of Biochemistry, Brown University, Providence, RI
Dept. of Pharmacology, SUNY at Stony Brook, New York
- 1993 Dept. of Medicine, Memorial Sloan-Kettering Cancer Center, NY
Population Council, Rockefeller University, New York
- 1994 Program in Molecular Biology, Loyola University, Chicago
German Human Genetics Society Annual Meeting, Duesseldorf, Germany
German Cancer Research Center, Heidelberg, Germany
- 1994 **Endocrine Society Annual Meeting, Anaheim, California**
Dept. of Urology, Case Western Reserve University, Cleveland, OH
Dept. of Human Biological Chemistry and Genetics, U. Texas, Galveston
Topical glucocorticoids in asthma: Mechanisms and actions, Sarasota
- 1995 **Keystone Symposia on Apoptosis, Tamarron, Colorado**
La Jolla Institute for Allergy and Immunology, La Jolla, CA
Mary Lasker Symposium: Frontiers in Cancer Research, San Diego
Corticosteroid Action and Resistance in Asthma, London
Dept. of Pharmacology, Astra Draco Pharmaceuticals, Lund, Sweden
Society for Basic Urologic Research, 7th Annual Meeting, Chapel Hill
- 1996 **Academy of Allergy, Asthma and Immunology, Annual Meeting, New Orleans**
Honorary Symposium: Mechanisms of Steroid Hormone Action, UC San Francisco
Dept. of Pharmacology, Duke University, Durham
American Association of Cancer Research Annual Meeting, Washington D.C.

Invited Lectures at other Institutions and at **Scientific Meetings** (1988 - present) – cont.

- 1996 **Gordon Conference on Experimental and Clinical Cancer Therapy, Oxford**
- 1997 **NIH Workshop on Applications of DNA Microarray Technology, Tucson**
- 1998 **Workshop on Glucocorticoid Induced Lymphocyte Apoptosis, Galveston, TX**
Ligand Pharmaceuticals, San Diego, CA
- 2002 **Congress on Beta Agonists: Nonbronchodilator Actions, Miami Florida**
- 2005 **FASEB Summer Conference on Steroid Signaling, Tucson, AZ**
- 2006 **Biology of Disease Vectors Workshop, University of Liverpool**
- 2007 **Vector Encounter Symposium, Johns Hopkins University**
Dept. of Biological Sciences, Wayne State University, Detroit, MI
American Society of Tropical Medicine and Hygiene, Annual Meeting, Philadelphia
- 2008 **Vector Encounter Symposium, Johns Hopkins University**
Dept. of Microbiology, Immunology & Pathology, Colorado State U., Fort Collins, CO
- 2009 **Vector Encounter Symposium, Johns Hopkins University**
- 2011 **Vector Encounter Symposium, Johns Hopkins University**