

November 2017

CURRICULUM VITAE

NAME: Sham S. Kakar, M.S., Ph.D., MBA (Entrepreneurship)

PRESENT ACADEMIC RANK: Professor, University of Louisville
Department of Physiology
Department of Biochemistry and Molecular genetics
Division of Endocrinology and Metabolism
James Graham Brown Cancer Center
Institute of Molecular Diversity and Drug Design (IMD3)
Center for Genetics and Molecular Medicine (cGeMM)

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Prospect, KY 40059
Phone: 502-931-1485

CITIZENSHIP: USA (Naturalized)

EDUCATION:

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| 2008-2010 | College of Business University of Louisville Louisville, KY MBA (Entrepreneurship): One of the top 10 institutes in MBA Programs in entrepreneurship in the nation. |
| 1984-1988 | Medical College of Ohio Department of Pharmacology Toledo, Ohio Research Associate |
| 1983-1984 | Baylor College of Medicine Department of Cell Biology Houston, TX Research Associate |
| 1977-1983 | NDRI, Kurukshetra University, India Department of Biochemistry Ph.D. (Biochemistry) |

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| 1973-1975 | NDRI, Kurukshetra University, India Department of Biochemistry M.Sc. (Biochemistry) |
| 1969-1973 | Panjab University, India Dyal Singh College, Karnal B.Sc. (Chemistry, Physics and Mathematics with Honor in Mathematics) |

ACADEMIC APPOINTMENTS:

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| 2008-Present | Professor, Department of Physiology, University of Louisville |
| 2003-Present | Professor, Department of Medicine, University of Louisville |
| 2003-Present | Professor, Division of Endocrinology, University of Louisville. |
| 2008-Present | Professor, Department of Biochemistry and Molecular Biology, University of Louisville |
| 2003-Present | Professor, James Graham Brown cancer Center, University of Louisville |
| 2003-Present | Professor, Institute of Molecular Diversity and Drug Design (IMD ₃), University of Louisville |
| 2000-2003 | Associate Professor, Department of Medicine, Division of Medical Oncology, Division of Endocrinology and Metabolism, Center for Molecular Genetics and Molecular Medicine, University of Louisville |
| 2000-2008 | Associate Professor, Department of Physiology and Biophysics, Department of Biochemistry and Molecular Medicine, University of Louisville |
| 1999-2000 | Associate Professor, Department of Physiology and Biophysics, University of Alabama at Birmingham |
| 1999-2000 | Scientist, Comprehensive Cancer Center, University of Alabama at Birmingham |
| 1993-1999 | Assistant Professor, Department of Physiology and Biophysics, University of Alabama at Birmingham |
| 1994-1999 | Associate Scientist, Comprehensive Cancer Center, University of Alabama at Birmingham |

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| 1997-2000 | Affiliated Assistant/Professor , Department of Animal and Dairy Sciences, Auburn University, Auburn, Alabama |
| 1988-1993 | Research Assistant Professor, Department of Medicine and Department of Physiology and Biophysics, University of Alabama at Birmingham |
| 1987-1988 | Research Assistant Professor, Department of Pharmacology, Medical College of Ohio, Toledo, Ohio |
| 1978-1983 | Assistant Professor, Department of Chemistry and Biochemistry, National Dairy Research Institute, Karnal, India |

ADMINISTRATIVE APPOINTMENTS:

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| 2017-present | Member: <u>Grievance Committee</u> , University of Louisville. |
| 2015-present | Member: <u>Rule and Regulation Committee</u> , University of Louisville. |
| 2014-2015 | Faculty Senate: <u>University Executive Committee</u> . Presentation and evaluation of new strategic plans and academic programs. The highest level committee at the University of Louisville. |
| 2012-present | Faculty Senate: <u>Institute and canters review committee</u> . Duties include evaluating institutes and centers for their progress. Approval of new institutes and centers at University of Louisville. |
| 2013-2016 | Faculty Senate: <u>Education and academic program</u> . Duties include evaluating various departments at the University of Louisville for existing programs and future directions and prospects. Provide ideas and innovation to bring up new ventures and programs in the departments with respect to improving quality of education, research and service. |
| 2010-2015 | Faculty Senator: <u>University of Louisville</u> . Faculty senate committee is one of the most important committees in the University of Louisville. The faculty senate duties include evaluation of University operation, implementation of new policies, approval of budget, approval of new programs, approval of new strategies for the progress of the university, approval of new hiring, and issues related to faculty and students. In addition, faculty senate serves as a liaison between faculty and the central administrators. |
| 2012-present | Committee member: Clinical Trial Committee (CSRC) . CSRC is one of the most important Committees at Brown |

Cancer Center, University of Louisville. The committee members play very critical role in evaluation of investigator initiated and industry sponsored protocols for clinical trials. Members provide in depth and comprehensive input about the validity of drug, its toxicity, feasibility, safe interaction with other drugs, ethical issues and its application for treatment and diagnosis. Based on committee approval, clinical trials are initiated. In case drug has adverse effects, the committee members recommend termination of the clinical trials.

2008-Present

Founder and Editor in chief: Journal of Ovarian Research. As an editor in chief of a scientific journal has great responsibility for publication of high quality manuscripts. Editor in chief provides directions and leadership to the associate editors and members of editorial board for the selection of high quality manuscripts and other administrative issues. I am also responsible in selecting editorial board members, and application of new strategies and innovation to improve the quality of the journal (Current Impact Factor = 2.56)

2013-Present

Founder and Editor: Journal of Cancer Stem Cell Research. Journal of Cancer Stem Cell Research is focused to publish high quality manuscripts in the field of cancer stem cell biology, clinical research, discovery of new drugs and mechanisms involved in self-renewal of cancer stem cells.

2006-Present

Director: On site facility for Sigma-Aldrich Chemical Company. Initiated on site facility for the Sigma-Aldrich at the University of Louisville. Negotiated with Sigma-Aldrich for heavy discount on chemicals and supplies, and free shipping which has resulted in **saving of approximately \$50,000/year to faculty of Medical School in shipping and discount.**

2003-2006

President elect, president, past president: Sigma XI Scientific Society, Louisville Chapter, 2001-2003.

2014-present

Committee member: Rule and Regulation Committee, University of Louisville. Duties include strategic planning and to include addendum and changes to improve the quality of education, promotion and tenure of the faculty and other related components important for the university.

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| 2016-Present | Committee member: Education committee, department of Physiology, University of Louisville. |
| 1998-2000 | Director, Seminar Program, Department of Physiology and Biophysics, University of Alabama at Birmingham. |
| 1999-2000 | Departmental representative to dean: Department of Physiology and Biophysics, University of Alabama at Birmingham. |

INTERPRENEURSHIP:

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| 2008-Present | Founder and Editor in Chief: Journal of Ovarian Research (A Scientific Journal). Since, launching of the Journal of Ovarian Research has gained worldwide awareness and reputation. It publishes high quality papers. The first official impact factor of the journal received was 2.56. |
| 2010-Present | Founder, president and CEO: Nanomark Therapeutics. Nanomark Therapeutics is a startup company and focused in research and development of novel therapeutics and targeted drugs for the treatment of ovarian cancer. Class Project. |

CONSULTANT

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| 1992-Present | Biotech Laboratories Inc., Houston, TX |
| 1995-1997 | Astra Zenca, Manchester, UK |
| 2010-Present | Nauga Needles Inc. Louisville, KY |

GRANT/CONTRACT SUPPORT:

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| 1. | NIH HL134644 T32 Training Grant: Kakar and Ratajczak (MPI) \$1,486,242 Current Trends in Stem Cell Therapies Role: Program Director 05/01/2017 to 03/31/2022 | |
| 2. | NIH R25-CACA134283 Hein and Kidd (MPI) University of Louisville Cancer Education Program 04/01/2017 to 3/31/2022 Role: Mentor | \$1,593,000.00 |
| 3. | Unbridled Charitable Foundation | \$1,000 |
| 4. | NIH 1U01CA185148-01A1 (Batra) MIC-1 and its functional partners in prostate cancer racial disparity Role on the Project: Co-Investigator and PI on subcontract 05/01/2015 to 04/30/2020 | \$1,573,025 |
| 5. | James Graham Brown Cancer Center | \$106,000 |

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| 6. | Comprehensive Enhancement Grant (CEG) University of Louisville Withaferin A prevents ovarian tumor growth in combination with cisplatin Role: Principal Investigator 09/01/2012 to 08/31/2013 | \$15,000 |
| 8. | James Graham Brown cancer center Bridge funds Role: Principal investigator 07/01/2012 to 06/30/2013 | \$106,000 |
| 9. | KSTC Phase O grant Combination strategies for the management of ovarian cancer 04/01/2012 to 09/30/2012 Role: Principal Investigator | \$4,000.00 |
| 10. | NIH/NCI R25-CA134283 Principal Investigator: David Hein University of Louisville Cancer Education Program 09/14/2011 to 08/31/2016 Role on the Project: Mentor | \$1,540,610 |
| 12. | Basic Research Grant, School of Medicine, University of Louisville Principal Investigator: Sham S. Kakar Application of biomarkers panel on evaluation of thyroid cancer Efforts: 10%; Salary: 0% 06/01/2011 to 05/30/2013 | \$15,000 |
| 13. | NIH/NCI RO1 CA124630 Principal Investigator: Sham S. Kakar Role of PTTG in Ovarian Tumorigenesis and Metastasis Effort: 38%; Salary: 38% 03/26/2007 to 12/31/2012 Role: Principal Investigator | \$1,300,000 |
| 14. | NIH RO1 HD05505571 Principal Investigator: Pat Moore Role of PACAP in the male fetal pituitary Efforts: 8%; Salary: 8% Role on Project: Co-Principal Investigator 07/01/2007 to 06/30/2012 | \$1,324,600 |
| 15. | NIH 1RO1EY018830-01A1 Principal Investigator: Qingxian Lu MerTK regulation of the RPB phagocytosis Efforts: 5%; Salary: 5% 12/01/2008 to 11/30/2013 Role on Project: Co-Principal Investigator | \$1,850,000 |

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| 16. | POCG, OTT, U of L Development of Targeted Therapy for Cancer Treatment Efforts: 10%; Salary: None 07/13/2009 to 01/12/2010 Role: Principal Investigator | \$33,000 |
| 17. | Clinical Translation Res Grant, University of Louisville Development of Targeted therapy for ovarian cancer Efforts: 10%; Salary: None 06/01/2010 to 07/31/2011 Role: Principal Investigator: Sham S. Kakar | \$50,000 |
| 18. | Kentucky Science and Technology Corporation, Phase O Targeted therapy for cancer 11/01/2011 to 10/30/2012 Role: Principal Investigator | \$4,000 |
| 19. | Kentucky Comm. Fund (KCF) Principal Investigator: Sham S. Kakar Targeted therapy for cancer 12/01/2011 to 11/30/2012 Role: Principal Investigator | \$75,000 |
| 20. | NIH T32 ES011564 Principal Investigator: David Hein UofL Environmental Health Science Training Program 07/01/2009 to 06/30/2014 Role: Mentor | \$1,999,550 |
| 21. | The Endocrine Society PTTG role in ovarian tumorigenesis and metastasis 02/01/2007 to 01/31/2008 Role: Principal Investigator | \$50,000 |
| 22. | Department of Defense (DOD) BC053371 Development of LHRH receptor targeted therapy for breast cancer Efforts: 10%; Salary: 10% 08/01/2006 to 07/31/2008 Role: Principal Investigator | \$111,000 |
| 23. | James Graham Brown Cancer Center Development of ovarian epithelial tumor model. Efforts: 5%, Salary: None 03/01/2007 to 02/29/2008 Role: Principal Investigator | \$50,000 |
| 24. | Charlotte Geyer Foundation Role of PTTG in ovarian tumorigenesis and Metastasis Efforts: 25%; Salary 25% 03/01/2007 to 02/28/2008 | \$100,000 |

- Declined due to overlap with NCI CA124630 grant
Role: Principal Investigator
25. Kentucky Lung Cancer Research Program
Molecular Mechanisms of PTTG in lung cancer
Efforts: 10%; Salary: None
01/01/2003 to 12/31/2007 \$300,000
Role: Principal Investigator
 26. NIH/NCI RO1 CA82511
Molecular Mechanisms of HTTG in Ovarian Tumors
Efforts: 40; Salary 40%
07/01/1999 to 04/30/2005 \$782,038
Role: Principal Investigator
 27. Department of Defense Pre-doctoral training grant
Principal Investigator: Coral Lamartiniere
Pre-doctoral training grant on breast cancer
07/01/2000 to 06/30/2004 \$1,000,000
Role: Mentor
 28. NCI P20
Principal Investigator: Donald M. Miller
Comprehensive Center Planning Grant
10/01/2002 to 09/30/2007 \$1,000,000
Role: Investigator
 29. NIH/NCI R25 CA44789
Principal Investigator: Nobert Burzynski
Cancer Education grant program
08/01/2002 to 07/31/07 \$1,000,000
Role: Mentor
 30. James Graham Brown Cancer
PTTG in tumor: Analysis by microarray \$5,000
Role: Principal Investigator
 31. James Graham Brown Cancer
Downstream signaling profiles of GnRH and Activin \$5,000
Role: Principal Investigator
 32. Center for Molecular Genetics and Molecular Medicine cGEMM)
Securin and Sensitine in β Cell function
12/01/2003 to 11/30/2004 \$30,000
Role: Principal Investigator
 33. University of Louisville (CRG)
Molecular mechanisms of PTTG in ovarian tumors
07/01/2003 to 06/30/2004 \$15,000
Role: Principal Investigator

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| 34. | James Graham Brown Cancer Center Securin as a Molecular Target for Ovarian Cancer Treatment 07/01/2003 to 06/30/2004 Role: Principal Investigator | \$1,800 |
| 35. | NIH/NCI RO1 Principal Investigator: Deodutta Roy Role of Nonhistone Proteins in Hormonal Carcinogenesis Efforts: 5%; Salary 5% 12/01/1996 to 01/31/2000 Role: Co-Principal Investigator | \$900,777 |
| 36. | NIH/NCI RO1CA60871 Supplement Grant 02/01/1999 to 01/31/2000 Role: Principal Investigator | \$9,600 |
| 37. | NCI RO1 CA 60871 Molecular Characterization of GnRH Receptors Efforts: 50%; Salary: 50% 07/01/1993 to 01/31/2004 Role: Principal Investigator | \$1,500,000 |
| 38. | NCI RO1 CA 60871 Instrument Grant 07/01/1995 to 06/30/1996 Role: Principal Investigator | \$12,470 |
| 39. | NCI RO1 CA 60871 Supplement grant 10/01/1996 to 06/30/1997 Role: Principal Investigator | \$41,265 |
| 40. | US Department of Agriculture USDA#93-37203-9067 Initiating Principal Investigator: Jimmy D. Neill Molecular Regulatory Mechanism of LH Secretion in Cattle Efforts: 10%; Salary: 10% Role on Project: Principal Investigator 10/01/1993 to 09/30/1996 | App \$500,000 |
| 41. | NIH RO1 DK 45519 Principal Investigator: Jimmy D. Neill Molecular Characterization of Angiotensin II Receptors Efforts: 20%; Salary: 20% Role on Project: Co-Principal Investigator 10/01/1992 to 09/30/1995 | App \$850,000 |
| 42. | Biotech laboratories Inc, Houston, TX Development of DNA Purification System 06/01/1993 to 03/31/1994 Role: Principal Investigator | \$10,830 |

43. NIH RO1
Principal Investigator: H.W. Overbeck
Hemodynamics and Vasoactivity in Hypertension
Efforts: 30%; Salary: 30%
01/01/1990 to 12/31/1994 \$1,445,492
Role: Co-Principal Investigator
44. NIH RO1
Principal Investigator: H.W. Overbeck
Ions Vascular Muscle, Endothelium and Hypertension
Efforts: 30%; Salary: 30%
09/01/1990 to 08/31/1995 \$1,527,145
Role: Co-Principal Investigator
45. NIH RO1
Principal Investigator: H.W. Oberbeck
Hemodynamics and Vasoactivity in Renal Hypertension
Efforts: 30%; Salary: 30%
09/01/1988 to 06/30/1989
Role: Co-Principal Investigator
46. NIH RO1
Principal Investigator: H.W. Overbeck
Ions, Vascular Muscle, Endothelium and Hypertension
Efforts: 30%; Salary: 30%
09/01/1988 to 06/30/1989
Role: Co-Principal Investigator
47. NIH P01
Director: Amir Askari
Role of cardiac glycoside in heart function
07/01/1987 to 06/30/1992 App \$5,000,000
Role: Investigator

GRANTS UNDER REVIEW

1. 1R01CA237146-01 Kakar (PI)
Deciphering the role of oncogene Securin-a novel stem/cancer stem cell marker in tumor progression and drug resistance.
04/01/2019 to 03/31/2024 \$1,913,286
Role: Principal Investigator
2. 1R01CA241168-01 Kakar (PI)
Targeting of ovarian cancer stem cells and metastasis by a small molecule Verrucar J.
07/01/2019 to 06/30/2024 \$1,929,708
Role: Principal Investigator
3. 1R25GM133328-01 Kakar (Contact PI) and Davis
UofL Bridges to Baccalaureate (ULBB)

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| 07/01/2019 to 06/30/2024 | \$1,476,191 |
| Role: Program Director (contact) | |

GRANTS SUBMITTED BUT NOT FUNDED

1. NIH 1R25GM123933-01A1 Kakar and Davis (MPI)
 Bridge to Undergraduate Success (BUS) Program
 07/01/2018 to 06/30/2023 \$1,478,380
Role: Program Director (Contact)

2. NIH 1T32HL134627-01A1 Kakar, Joshua and Tyagi
 Cardiovascular Sciences Training Program at University of Louisville
 04/01/2018 to 2023 \$1,546,492
Role: Program Director

3. NIH R21 Aqil
 Overcoming drug resistance and metastasis in ovarian cancer by exosomal anthrocyanidins
 07/01/2018 to 06/30/2020 \$424,600
 Role: Co-Investigator

4. 1T23HL129962-1A (Ratajczak and Kakar, MPI)
 Stem Cells in Physiology and Pathophysiology
 07/01/2016 to 06/30/2021 \$1,069,886
Role: Program Director

5. 1R25GM119953-01 (Kakar and Joshua, Allen, Florence, MPI)
 Building a Bridge to Biomedical Research Careers
 07/01/2016 to 6/30/2021 \$1,428,990
Role: Program Director (Contact)

6. DOD LC140611 Kakar (PI)
 Natural product Withaferin A alone or in combination with cisplatin targets cancer stem
 cells in lung cancer.
 04/01/2015 to 03/31/2016 \$150,000
Role: Principal Investigator

7. DOD Marisuz Ratajczak
 Purinergic signaling in lung cancer chemotaxis and metastasis
 04/01/2015 to 03/31/2016 \$150,000
Role: Co-Principal Investigator

8. DOD Marisuz Ratajczak
 The role of bioactive lipids in progression and metastasis of lung cancer
 02/01/2015 to 01/31/2016 \$150,000
Role: Co-Principal Investigator

9. DOD Magda Kucia
 Radio- and chemotherapy induced pro-metastatic microenvironment
 04/01/2015 to 03/31/2016 \$150,000
Role: Co-Principal Investigator

10. NIH AN:3730335 Kakar and Batra (MPI)
 Withaferin A alone or in combination with cisplatin targets cancer stem cells in ovarian cancer
 04/01/2015 to 03/31/2020 \$2,762,322
Role: Principal Investigator (Contact)

11. NIH 1R43CA183306-01 (Sanjay Singh)
 Combination therapy with DOXIL and WFA in platinum-resistant ovarian cancer
 04/01/2014 to 03/31/2016 \$220,113
Role: Co-Investigator on SBIR grant and Principal Investigator on subcontract

12. SOM Collaborative Research Grant SS Kakar, MZ Ratajczak and Lynn Parker
 WFA in combination with CIS targets cancer stem cells in ovarian cancer
 12/01/2014 to 11/30/2015 \$75,000
Role: Principal Investigator

13. KLCP cycle 14 SS Kakar (PI)
 Cancer stem cells and recurrence of lung cancer
 01/01/2015 to 12/31/2016 \$150,000
Role: Principal Investigator

14. KLCRP cycle 14 Mariusz Ratajczak (PI)
 Novel role of purinergic signaling in lung chemotaxis and metastasis
 01/01/2015 to 12/31/2016 \$150,000
Role: Co-Investigator

15. NIH UO1
 Pathobiological Implications of Mucins (MUCs) in Oral Cancer
 07/01/2015 to 6/30/2020
Role: Co-investigator, Principal Investigator on subcontract.

16. NIH 1R43 CA183306-01
 Combination therapy with liposomal doxorubicin (DOXIL) and withaferin A in platinum-resistant ovarian cancer.
 07/01/2015 to 12/31/2015 \$226,000
Role: Principal Investigator

17. NIH NIGMS T32 Training Grant MPI (Kakar and Ratajczak)
 Stem cells in regenerative medicine and tumorigenesis.
 09/23/2015 to 08/31/2020 \$715,579
Role: Principal Investigator

18. NIH NHLBI T32 training Grant MPI (Kakar and Ratajczak)
 Stem cells in physiology and pathophysiology.
 09/23/2015 to 08/31/2020 \$1,289,215
Role: Principal Investigator

19. NIH/1U01CA191308-01 Kakar and Zhang MPI
 Characterization of metabolites in ovarian cancer for diagnosis purpose
 Role on project: Principal Investigator (contact) App \$4,500,000.00

12/01/2014 TO 11/30 2019

Role: Principal Investigator (contact)

20. NIH 1R43CA173999-01 (SBIR)
Principal Investigator: Sanjay K. Singh
Metabolites signature for ovarian cancer diagnosis \$402,000.00
Role: Co-Investigator
21. NIH 1U43CA162458-A1 (SBIR)
Principal Investigator: Sham S. Kakar \$262,000.00
Application of Nanoparticles in the Development of Targeted Therapy for Cancer
Role: Principal Investigator
22. NIH 1R21CA164699-01
Principal Investigator: Sham S. Kakar \$412,500
Withaferin A prevents ovarian tumor growth in combination with cisplatin
23. NIH/NCI 1RO1 CA169366-A1
Principal Investigator: Sham S. Kakar \$2,278,898.00
Novel combination strategies for management of ovarian cancer using DOX and WFA
24. NIH/NCI RO1 CA160386
Principal Investigator: Sham S. Kakar
Targeting securin in colon cancer treatment
Efforts: 30%; Salary: 30%
07/01/2011 to 06/30/2016 \$1,872,000
25. NIH RO1 CA138995-01
Principal Investigator: Sham S. Kakar
LHRH Peptide Receptor Targeted Therapy for Ovarian Cancer
Efforts: 25%; Salary: 25%
10/01/2010 to 09/30/2015 \$1,850,000
26. NIH R21 CA173495
Withaferin A prevents ovarian tumor growth in combination with cisplatin
Principal Investigator: Sham S. Kakar
07/01/2013 to 06/30/2015 \$421,195
27. NIH 1U01CA182363-01
Metabolites as Biomarkers for Early Diagnosis of Ovarian Cancer
Role: Principal Investigator
12/01/2013 to 11/30/2018 \$3,273,780
28. 1R01CA184864-01
Mechanisms of WFA/cisplatin combination in recurrence of ovarian cancer
04/01/2014 to 03/31/2019 \$2,509,019
Role: Principal Investigator

PATENTS:

1. US and International Patent Application # PCT/US09/47816. Methods for treatment and detection of cancer. Submitted on June 2009. Not awarded
2. Provisional Patent Application # 61/648,865. METHODS FOR PRIMARY AND METASTATIC CANCER DIAGNOSIS AND TREATMENT. Filed on June 18, 2012. Not awarded

DISCLOSURES:

1. Antibody-Drug Conjugate for Head and Neck Cancer Treatment. Sham S. Kakar and Guilherme Rabinowits. 08/25/2010
- 2.
3. Development of Novel Diagnostic Array for Thyroid Cancer. Sham S. Kakar and Kateryna Komarovskiy. 09/01/2010.

TECHNOLOGY LINCENSED:

1. Lambda Faze I, Lambda DNA purification kit (commercialized by Biotecx)
2. Lambda Faze II, Lambda DNA purification kit (commercialized by Biotecx)
3. Plasmid DNA purification kit (commercialized by Biotecx)
4. Transferred GnRH receptor recombinant DNA technology and reagents to Biomaterial Pharmaceutical Company for the development of cancer drugs
5. Licensed baclovirus expression system expressing GnRH receptor to Astra Zenca Pharmaceuticals for the development cancer drug for breast cancer treatment

CLINICAL TRIALS:

1. COMBINATION THERAPY WITH LIPOSOMAL DOXORUBICIN AND WITHA FERIN A (ASHWAGANDA EXTRACT) IN RECCURENT OVARIAN CANCER. **Clinical Trial Underway**

TEACHING:

At National Dairy Research Institute, Karnal, India

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| 1978-1983 | Course Director and Instructor: Intermediatory Metabolism (Graduate Course for Biochemistry, Physiology and Human Nutrition students) |
| 1978-1983 | Course Director and Instructor: Bio-Organic Chemistry (Graduate Course for Biochemistry students) |
| 1980-1983 | Course Director and Instructor: Physical Biochemistry (Graduate Course for Biochemistry students) |
| 1978-1983 | Course Director and Instructor: Biochemistry-Lab course (Graduate Course for Biochemistry, Physiology and Human Nutrition students) |

At University of Alabama at Birmingham:

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| 1993 | Instructor: Team teaching of Medical Physiology (Endocrinology) to Medical, |
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- Dental and Optometry students
- 1995-2000 **Instructor:** Team teaching of Medical Physiology (Endocrinology) to Dental and Optometry students
- 1999-2000 **Facilitator:** Medical Students Small Group Discussion
- 2000 **Mentor:** Medical students' special topic presentation (Ovarian Tumors)
- 1999 **Course Developer and Course Director/Instructor:** Selected Topics in Physiology 798 II (Molecular Endocrinology), Graduate Course
- 2000 **Course Developer and Course Director/Instructor:** Selected Topics in Physiology 798 III (Tumor Biology), Graduate Course, spring 2000.

At University of Louisville:

- 2000-2002 **Instructor:** Cancer Biology, Department of Biochemistry and Molecular Biology.
- 2007-Present **Instructor:** Team teaching of Systemic Physiology PHZB 606 (Endocrinology) to graduate students.
- 2007 **Instructor:** Team teaching of Methods II, Department of Biochemistry and Molecular Biology.
- 2005-Present **Instructor:** Team teaching of systemic Physiology 609 (Endocrinology) to graduate students.
- 2007-2017 **Instructor:** Special Lecture on G Protein to Medical Students under T35 Training Grant, University of Louisville.
- 2014- **Instructor:** Team teaching of Pharmaco-Physiology PHZB 602 to graduate students.
- 2018- **Course Developer and Director:** New course at graduate level "Stem Cell Biology and Regenerative Medicine". The course is designed for post-doctoral fellows and graduate students.

PROFESSIONAL MEMBERSHIP/REVIEWERS ACTIVITIES:

Professional Societies

1. American Association for the Advancement of Science
2. American Association for Biochemistry and Molecular Biology
3. The Endocrine Society
4. American Association for Cancer Research
5. International Society of oxygen transport to tissues (ISOTT)

Member of grants review study sections (Reviewer)

6. 1998-2000: Member of USDA Enhancing Reproductive Efficiency-Study Section.
7. 2001-2003: Ad-hoc member of Biochemical Endocrinology (BCE) Study section, National Institute of Health.
8. 2001-2004: Grant reviewer for internal grants for James Graham Brown Cancer Center, University of Louisville.
9. 2006, 2007, 2008: Special grant reviewer for NIH Program Project Grants
10. 2014- : Special grant reviewer for Program Project Grants.
11. 2010-present: Grant reviewer for Kentucky Science and Technology Corporation.
12. 200: Special external grant reviewer for British Columbia Research Institute for Children's & Women's Health, Vancouver, B.C., Canada.
13. 1999-present: Special Grant Reviewer for Wellcome Trust, London, UK, and MRC England.
14. 2012: External grant reviewer for Wellbeing of Women, UK.
15. 2012: External grant reviewer for Icelandic center for research, Rennis.
16. 2013: External grant reviewer for Cancer, UK.
17. 2013-: NIH grant reviewer; SEP, ZRG1 CB-G(02)
18. 2013-: NIH study section ZCA1 RPRB-C (M1) P SPORE in Breast, Cervical, Lung, Mesothelioma and Ovarian Cancers.
19. 2014-: ZAC1 RPRB-C (J1)P NCI SPORE II
20. 2014-: ZAC1 TCRB (J1) B Provocative Questions Group A.
21. 2014-: OCRP Immunology-Ad Hoc Reviewer
22. 2014- : OCRP Cell Biology and Molecular Biology-Reviewer
23. 2016- : ZCA1 RPRB-M(M1) S, NCI Provocative Review PQ3
24. 2017- : 2017/05 ZCA1 SRB-1 (M2) 1, NCI Provocative Review PQ1
25. 2018: ZCA1 SRB-1 (M2), R03/R21 Cancer Biology /Genetics /Translational/Targeting Therapy.
26. 2018: ZCATCRB-Q (01) B: SEP-8A: NCI Clinical Trial and Translational study section.
27. 2018: ZCATCRB-V (01) S: SEP-7: NCI Clinical Trial and Translational study section.

Others

1999: Organized and chaired The Special Symposium on "Molecular Aspects of Human Reproduction" at the 10th International Congress on Human Reproduction held at Bahia, Brazil (May 4th to May 8th)

2006: Committee member for organization of ISOTT symposium at Louisville.

1995-1999: Indo-US Liaison for the Association of Endocrinologists of Indian Origin.

1999-2003: Secretary for the Association of Endocrinologists of Indian Origin.

1993: Judge for the Intel International Science Fair.

2000, 2001, 2002, 2004, 2006: Judge for the Regional Science fair.

2002: Special judge, Intel International Science and Engineering Fair, appointed by Endocrine Society.

1999-Present: Campaign member for fund collection for American Cancer Institute.

2007: Judge for Sigma Xi at Science Fair for DuPont Manual High School.

2007: Judge for IMD3 poster evaluation and scholarship.

2007: Judge for Manual High School Science fair.

2007- Member, International Advisory Board, “International conference on environmental impact on human health and therapeutics challenges” Annual convention of association of Biotechnology and Pharmacy.

2001: External reviewer for Promotion and Tenure for Dr. P.C. Leung, Department of Obstetrics and Gynecology, Child and Family Research Institute, University of British Columbia, Vancouver, British Columbia, Canada.

2005: External reviewer for Promotion and Tenure for Dr. Christopher J. McCabe School of Clinical and Experimental Medicine, Institute of Biomedical Research, 16 University of Birmingham, B15 2TH, UK.

2008: External Ph.D. thesis reviewer for Mr. Manoj Kumar, Guru Nanak University, Amritsar, India.

2009, 2010: External reviewer for Promotion and Tenure for Dr. Pumin Zhang, Baylor College of medicine, Houston, TX.

2010-present: Judge for Research Louisville.

2010: External reviewer for Promotion and Tenure for Dr. Quentin Felty, Florida International University, Miami, FL.

2011: External reviewer for Promotion and Tenure for Dr. Quentin Felty, Florida International University, FL.

2012: External reviewer for Promotion from Associate Professor to Professor for Dr. Ujendra Kumar, Faculty of Pharmaceutical Sciences, University of British Columbia, Canada.

2012: External reference for the award of Excellence in Research and Creative Activities for Deodutta Roy, Professor and Chair, Department Environmental Sciences, Florida International University, Florida.

2012: External Ph.D. thesis reviewer for Uttam Kumar Das, Vidasagar University, India. 2012.

AWARDS AND HONORS:

- 1969 Highest position in high school final class
- 1973 Topped in the college in undergraduate (B.Sc.) Class
- 1972 Lions Club (India) outstanding student award
- 1973-1975 Government of India Merit award
- 1975-1977 Indian Council of agriculture Research (ICAR) Pre-doctoral fellowship
- 1983-1984 Research Associate fellowship, Baylor College of Medicine, Houston, Texas
- 1984-1987 Research Associate Fellowship, Medical College of Ohio, Toledo, Ohio
- 1994 Invited guest speaker, one day International Conference on "Molecular Hypertension", Kobe, Japan
- 1997 The John R. Durant Award for Excellence in Cancer Research (Second place)
- 1998 The John R. Durant Award for Excellence in Cancer Research (First place)
- 1998 Manuscript entitled "Molecular Characterization of the Gonadotropin-Releasing Hormone Receptor Gene" authored by Sham S. Kakar was selected for the award as the best paper for 1998 for the Journal "Advances in Reproduction"
- 1998-2000 Listed in WHO'S WHO (America's Registry of Outstanding professionals, and Marquis Who's Who in Medicine and Healthcare)
- 2002 Research work covered by WebMD.Com, February 2002.
- 2003-2004 Elected President, President, and past President - SigmaXi, scientific organization (Louisville Chapter)
- 2006 Research work displayed by Kornhauser Health Science Library, University of Louisville
- 2006 Research work covered by Speed Engineer, University of Louisville
- 2006 Research work covered by IMPACT magazine, University of Louisville, fall 2006
- 2007 Prestigious research award from The Endocrine Society
- 2008-Present Founder and Editor in Chief "Journal of Ovarian Research"
(www.ovarianresearch.com)
- 2008 LHRH and Doxorubicin Conjugated Gold Nanoparticles for Breast Cancer Treatment, selected for press release at International Era of Hope Conference, a Department of Defense (DOD) conference, Baltimore, Maryland, June 26, 2008.
- 2009 Paper presented on LHRH as targeted molecule for drug delivery for cancer treatment, awarded a best presentation at 2nd Nanotechnology Symposium: Advances in Nanotechnology and Applications October 9-10, 2009. Sullivan University, Louisville, KY
- 2009 Poster on Implication of LHRH Receptor as a target molecule for cancer treatment, received 1st Place award – staff, at Research!Louisville, Oct. 2009.

- 2009 Business plan presentation on application of nanotechnology for targeted therapy for ovarian cancer treatment received first award in Ballard Morton Business Plan Competition, Oct 2009. \$8,000 for business plan and \$500 for trade show.
- 2010 Business plan on application of nanotechnology for targeted therapy for ovarian cancer treatment received first award at McGinnis Venture Competition sponsored by Carnegie Mellon University, March 2010. Competed against teams from very prestigious schools such as John Hopkins, Yale, Carnegie Mellon University, Columbia, Cornell etc. Won first award in life sciences track \$40,000 plus ticket to compete at Moot Corp Business Plan Competition (Super bowl of Business plan competition) for \$100,000 award.
- 2010 Business plan on application of nanotechnology for targeted therapy for ovarian cancer treatment received first award at New Venture Championship sponsored by Oregon University, Portland, April 2010. Competed against teams from well renowned National and International schools. Won first award for business plan presentation \$25,000 plus \$1,000 first award in fast pitch competition.
- 2010 Business plan on application of nanotechnology for targeted therapy for ovarian cancer treatment received best business plan presentation award \$2,000 and was selected as one of best team among 8 teams in the world at Moot Corp Business Plan Competition known as super bowl of business plan competitions, Austin, TX, May 2010.
- 2010 Presented business plan to board of advisors for the college of Business, University of Louisville. June 2010
- 2010 Invited as one of the best team among four teams in North America selected for business plan competition by University of Manitoba, Canada, August 2010. Presented business plan to 90 richest entrepreneurs in Canada.
- 2010 Faculty Excellence Recognition Award, University of Louisville. Oct, 2010.
- 2011 Distinguished guest speaker in International Symposium on Recent Advances in Clinical Disorders. Shri Guru Ram Rai Institute of medical and Health Sciences, Dehradun, India.
- 2012 Faculty Excellence Recognition Award, University of Louisville. Sep 2012.
- 2018 Summer undergraduate student awarded full bright scholarship.

COMMITTEES MEMBER AND SERVICES AT UNIVERSITY OF LOUISVILLE:

- Committee Member Decantal Review Committee (Dean of Medical School, University of Louisville, review committee), 2003
- Committee Member Fall Fest for IMD3, 2005
- Committee Member Summer Scholarship Program for IMD₃, 2005
- Committee Member IMD₃ Fall Fest, 2006

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| Committee Member | Graduate Scholar Program for IMD3, 2006, 2007 |
| Committee member | Graduate admission committee, Department of Physiology and Biophysics, University of Louisville, 2009-Present |
| Committee member | Recruitment committee for faculty positions, Department of Physiology and Biophysics |
| Committee Member | School of Medicine (SOM) Research Committee, 2010 to present |
| Chair | Periodic Career Review Committee for Dr. Stanley D'Souza, professor, Department of Physiology and Biophysics, University of Louisville, 2012 |
| Chair | Periodic Career Review Committee for Dr. Suresh Tyagi, professor, Department of Physiology and Biophysics, University of Louisville, 2011 |
| Chair | Periodic Career Review Committee for Dr. Gary Anderson, professor, Department of Physiology and Biophysics, University of Louisville, 2010. |
| Committee member | Periodic Career Review Committee for Dr. Jeff Falcon, associate professor, Department of Physiology and Biophysics, University of Louisville, 2012. |
| Committee member | Periodic Career Review Committee for Dr. William Wead, Associate Professor, Department of Physiology and Biophysics, University of Louisville, 2012. |
| Committee member | Periodic Career Review Committee for Dr. Gerard P. Rabalais, M.D., MHA, Professor and Chairman, Department of Pediatrics, University of Louisville. 2012. |
| Chair | Promotion committee for Dr. David Lominadze from associate professor to professor, Department of Physiology and Biophysics, 2013. |
| Committee Member | Promotion and tenure committee for Neetu Tyagi and Upal Sen, Department of Physiology and Biophysics, 2014. |
| Committee Member | Periodic Career Review Committee for Dr. Suresh Tyagi, Ph.D., Professor, Department of Physiology, 2015. |
| Committee Member | Periodic Career Review Committee for Dr. Dale Schuschke, Ph.D., Professor and Vice Chair, Department of Physiology, 2015. |
| Committee Member | Periodic Career Review Committee for Dr. Andrew Roberts, Ph.D., Associate Professor, 2016. |
| Committee Member | Periodic Career Review Committee for Dr. Suresh Tyagi, Ph.D., Professor and Vice Chair (Research), Department of Physiology, 2016. |
| Chair | Periodic Review and Promotion Committee for Dr. Claudio Maldonado, Ph.D. (From Associate Professor to Professor), Department of Physiology, 2016. |
| Committee Member: | Cynthia Miller, promotion to tenure and associate professor |
| Committee member: | Nolan Boyd, promotion to associate professor |

Committee member: Stanley D'Souza periodic review

Committee member: University Grievance committee (2018-)

GRADUATE STUDENTS TRAINED/MENTORED:

As a primary mentor:

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| 1997-1998 | <u>Iantha Williams</u> , Graduate Student, Department of Physiology and Biophysics, UAB |
| 1998-2000 | <u>Leilei Chen</u> , Graduate Student, Department of Physiology and Biophysics, UAB |
| 2000 | <u>Tori Tucker</u> , Winter quarter, 2000, Graduate Student, Department of Physiology and Biophysics, UAB |
| 200-2002 | <u>Shawn Flynn</u> , Graduate Student, Department of Biochemistry and Molecular Biology, University of Louisville |
| 2001-2003 | <u>Amy Clem</u> , Graduate Student, Department of Biochemistry and Molecular Biology, University of Louisville |
| 2001-2006 | <u>Tariq Malik</u> , Graduate Student, Department of Biochemistry and Molecular Biology, University of Louisville |
| 2001-2004 | <u>Williard Mazhawidza</u> , Graduate Student, Department of Biochemistry and Molecular Biology, University of Louisville |
| 2002-2006 | <u>Alvin Thompson</u> , Graduate Student, Department of Biochemistry and Molecular Biology, University of Louisville |
| 2002-2004 | <u>Dinesh Abichandani</u> , Graduate Student, Department of Computer Science, University of Louisville |
| 2003-2006 | <u>Shahenda El-Naggar</u> , Graduate student, Department of Biochemistry and Molecular Biology, University of Louisville |
| 2007-2008 | <u>Katherine M. Pohlgeers</u> , Graduate student, Department of Physiology and Biophysics, University of Louisville |
| 2007-2008 | <u>Julie Davenport</u> , Graduate Student, September 2007-2008, Department of Physiology and Biophysics, University of Louisville |
| 2008-2010 | <u>Sarah E. Norberto</u> , Graduate Student 2008, Department of Physiology and Biophysics, University of Louisville |
| 2008-2012 | <u>Miranda Fong</u> , Graduate Student, Department of Physiology and Biophysics, University of Louisville |
| 2009 | <u>Allison Beach</u> , Graduate Student, Department of Physiology and Biophysics, University of Louisville |
| 2009 | <u>Lauren Hutchinson</u> , Graduate student, Department of Physiology and Biophysics, University of Louisville |
| 2010 | <u>Kera Watson</u> , Graduate student, Department of Physiology and Biophysics, University of Louisville |

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| 2011 | Lee Winchester, Graduate student, Department of Physiology and Biophysics, University of Louisville. |
| 2016-2017 | Kelsey Carter, Graduate student, Department of Physiology, University of Louisville. |
| 2017-2018 | Morgan Matthews, Graduate Student, Department of Physiology, University of Louisville. |

CHAIR/MEMBER OF DISSERTATION COMMITTEE:

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| Member | <u>Tung-chin Chiang</u> , School of Public Health, UAB |
| Chair | <u>Leilei Chen</u> , Department of Physiology and Biophysics, UAB (Major advisor) |
| Chair | <u>Iantha Williams</u> , Department of Physiology and Biophysics, UAB (Major advisor) |
| Chair | <u>Shawn Flynn</u> , Department of Biochemistry and Molecular Biology (Major advisor) |
| Chair | <u>Amy Clem</u> , Department of Biochemistry and Molecular Biology (Major advisor) |
| Chair | <u>Tariq Malik</u> , Department of Biochemistry and Molecular Biology (Major advisor) |
| Chair | <u>Williard Mazhawidza</u> , Department of Biochemistry Molecular Biology (Major advisor) |
| Chair | <u>Alvin Thompson</u> , Department of Biochemistry and Molecular Biology (Major advisor) |
| Chair | <u>Dinesh Abichandani</u> , Department of Computer Science (Co-advisor) |
| Chair | <u>Shahenda El-Naggar</u> , Department of Biochemistry and Molecular Biology (Major advisor) |
| Member | <u>Aedis Kazanjian</u> , Department of Biochemistry and Molecular Biology |
| Member | <u>Wenhai Shao</u> , Department of Microbiology and Immunology |
| Member | <u>Kamaljeet Kaur</u> , Department of Anatomy and Neurobiology |
| Member | <u>Santosh Math</u> , Department of Physiology and Biophysics (Committee member) |
| Chair | <u>Katherine M. Pohlgeers</u> , Department of Physiology and Biophysics (Major advisor) |
| Chair | <u>Julie Davenport</u> , Department of Physiology and Biophysics (Major advisor) |
| Chair | <u>Miranda Fong</u> , Department of Physiology and Biophysics (Major advisor) |
| Chair | <u>Sarah E. Norberto</u> , Department of Physiology and Biophysics (Major advisor) |
| Chair | <u>Allison Beach</u> , Department of Physiology and Biophysics (Major advisor) |
| Chair | <u>Lauren Hutchinson</u> , Department of Physiology and Biophysics (Major advisor) |
| Chair | <u>Kera Watson</u> , Department of Physiology and Biophysics (Major advisor) |

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| Member | Nicole Striver, Department of Physiology and Biophysics |
| Chair | Kelsey Carter, Department of Physiology (Major advisor) |
| Member | Zack Sellers, Department of Microbiology and Immunology |
| Chair | Kelsey Carter, Department of Physiology. |

POST-DOCTORAL FELLOWS/MEDICAL FELOWS TRAINED/MENTORED:

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| 1995-1996 | Sati Nath, Ph.D. (Post-doc fellow) |
| 1998-2001 | Rashmi Puri, MBBS, M.D. (Post-doc fellow) |
| 2001-2006 | Tariq Hamid, Ph.D. (Post-doc fellow) |
| 2006-2008 | Siva K. Panguluri, Ph.D. (Post-doc fellow) |
| 2007-2008 | Umesh Goswami, M.D. (Post-doc fellow) |
| 2008-2011 | Parag P. Shah, Ph.D. (Post-doc fellow) |
| 2008-2009 | Hardeep Kaur, Ph.D. (Post-doc fellow) |
| 2010-2011 | Youling Yuan, Ph.D. (Post-doc fellow) |
| 2009-2011 | Kateryna Komarovskiy, M.D. (Medical Fellow) |
| 2012-2013 | Sanjay K. Singh, Ph.D. (Research Associate) |
| 2016-2017 | Seema Parte, Ph.D. (Research Associate) |
| 2017- | Aaron Mack, M.D. (Post-doctoral fellow) |
| 2018- | Alex Straughn, Ph.D. (Post-doctoral fellow) |
| 2018- | Puja Kohli, M.D. (Post-doctoral fellow) |

SUMMER STUDENTS TRAINED/MENTORS:

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| 1991 | Manish Goyal, High school student, Graduated from Medical School, 1998 |
| 1991 | Anil Nanda, High School Student, Graduated from Medical School, 1999 |
| 1999 | Mukul Mehra, High School Student, Graduated from Medical School, 1999 |
| 1999 | Julia Starr, High School Student |
| 1999-2000 | Monnica Goyal, Undergraduate Student, Graduated from medical School, 2008 |
| 2002-2003 | Shelly Kakar, High School Student, at present in residency program at UPMC. |
| 2005 | Nimish Patel, Undergraduate Student, Graduated from Medical School, 2010 |
| 2005 | Jonathan W. Obert, Undergraduate Student, graduated from Medical School |
| 2005-2006 | Alison Burton, Undergraduate Student, Graduated from University of Louisville, 2008 |
| 2005 | Christi Bradshaw, Undergraduate Student, graduated from medical school |

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| 2005 | Suman Vollenski, Undergraduate Student, Graduated from Medical School, 2010 |
| 2006 | Melisa Stewart, Undergraduate Student, Graduated 2008 |
| 2006-2007 | Abi Mehta, High School Student, at present Graduate Student, University of Louisville. Graduated from law school |
| 2007 | Devin Druen, Undergraduate Student, graduated from Master Program, 2010 |
| 2007 | John Schuler, Graduate Student, graduated from Medical School |
| 2008 | Casey Yeakel, Undergraduate Student, graduated from Medical School |
| 2008-2009 | Arooshi Kumar, High School Student, graduated from MIT, and Medical School, at present serving as medical resident in New York |
| 2008-2009 | Rajita Kumar, High School Student, graduated from MIT and at present in medical school, University of Louisville. |
| 2009 | Mahek Goel, Graduate student, at present Graduate student, graduated as Ph.D. from University of Alabama at Birmingham. |
| 2010 | Daniel Pearson, Undergraduate Student, graduated from Medical school. |
| 2010 | Anmol Kantora, High School Student, graduated from University of Louisville. |
| 2010 | Saurabh Gupta, Medical Student, graduated from medical school, at present in medical resident at University of Alabama at Birmingham. |
| 2011 | Emeka Nwaneri, Undergraduate student, graduated from University of Louisville. |
| 2013 | Pavani Villerlavi, Undergraduate student, graduated from University of Louisville, at present in medical school. |
| 2013 | Kainat Ahmed, DuPont Manual High School. |
| 2014 | Avani Kabra, DuPont Manual High School, High School Student. |
| 2014 | Kara Garcia, Bellarmine University (KBRAIN Program), Undergraduate Student |
| 2014 | Addison Bray, University of Louisville (Cancer Training Program), Undergraduate Student |
| 2015 | Tayler Johnson, Eastern Kentucky University (KBRAIN Program) |
| 2015 | Jenna Chong, Cornell University (Cancer Training Program) |
| 2015 | Ria Jain, DuPont Manual High School, High School Student |
| 2016 | Ankit Kanothara, DuPont Manual High School, High School Student |
| 2016 | Karen Udoh, University of Louisville, Undergraduate Student |
| 2016 | Lindsey Meyer, University of Bellarmine, Undergraduate Student |
| 2017 | Karen Udoh, University of Louisville, Undergraduate Student |
| 2018 | Alanis Morgan, KBRIN program |

EDITORIAL SERVICE:

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|-----------------------------|--|
| Founder and Editor in chief | Journal of Ovarian research (2008-Present) |
| Editorial Board member: | Stem Cell Reviews and Reports. 2017-Present |
| Editorial board member | Molecular Andrology (1997 to 2005) Advances in Reproduction (1998 to 2005) |
| Founder and Editor | Journal of Cancer Stem cell Research |
| Editorial board member | International Journal of Biotechnology and Pharmacy Journal of Community Nutrition and health, 2012-present |
| Editorial board member | Clinical Translational Medicine (stem cell therapies section) |
| Associate Editor: | International Journal of Research in Pharmaceutical Sciences (IJRPS) (2009-Present) |
| Guest editor: | Advances in Reproduction, Volume 3/4 (eds. Sham S. Kakar and Paulo Spinola) (1999) |
| Editor | Insight into Ovarian Cancer (in preparation) |
| Reviewer | Molecular and Cellular Neuroscience |
| Reviewer | American Journal of Physiology |
| Reviewer | Endocrinology |
| Reviewer | Life Sciences |
| Reviewer | Hypertension |
| Reviewer | Regulatory Peptides |
| Reviewer | Journal of Clinical Endocrinology and Metabolism |
| Reviewer | International J. Cancer |
| Reviewer | BBA |
| Reviewer | Eur J. Endocrinology |
| Reviewer | British Journal of Cancer |
| Reviewer | Journal of American Society of Nephrology |
| Reviewer | Cancer Research |
| Reviewer | Clinical Cancer Research |
| Reviewer | Endocrine Related Cancer |
| Reviewer | Journal of Endocrinology |
| Reviewer | Brain Research |
| Reviewer | Molecular and Cellular Biology |
| Reviewer | FASEB Journal |
| Reviewer | FEBS Letters |
| Reviewer | Molecular Cancer |
| Reviewer | Oncogene |
| Reviewer | Journal of Molecular Endocrinology |
| Reviewer | Journal of Clinical Cancer Research |
| Reviewer | American Journal of Obs and Gyn |
| Reviewer | Journal of Ovarian Research |
| Reviewer | Mutation Research |
| Reviewer | Cancer Investigation |

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| Reviewer | Cellular and Molecular Life Sciences |
| Reviewer | Nature (Signaling) |
| Reviewer | PLoS One |
| Reviewer | Cancer Letters |
| Reviewer | Experimental and Molecular Pathology |
| Reviewer | Oncotarget |

SYMPOSIA CHAIRED

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| Chair: | Molecular Aspects of Human Reproduction, 10 th World Congress on Human Reproduction, Bahia, Brazil. 1997 |
| Chair | ISOTT symposium “Oncology II” 2006, Louisville, KY |
| Chair | 12 th World Congress on Advances on Oncology and 10 th International Symposium on Molecular Medicine, “Molecular Oncology/Angiogenesis”, Crete, Greece, 2007. |
| Chair | Fourth Annual Nanotechnology and Nanomedicine symposium. Sullivan University, School of Pharmacy, Louisville, KY. September 23-24, 2011. |

INVITED LECTURES/PRESENTATION:

- 1984: Department of Cell Biology, Baylor College of Medicine, Houston, Texas. Identification and purification of a cyclic AMP activated protein (axokinin) involved in sperm motility.
- 1987: Department of Pharmacology, Medical College of Ohio, Toledo, Ohio. Activation of Na⁺/K⁺ ATPase by fatty acids and fatty acyl CoAs.
- 1988: Hypertension Program, Department of Medicine, University of Alabama, Birmingham, Alabama. Identification of a novel Na⁺/H⁺ exchanger in cardiac cells.
- 1990: Sterling Pharmaceutical, Albany, New York. Purification and reconstitution of cardiac Na⁺/H⁺ exchanger.
- 1989: Marrion Laboratories, Kansas City, Kansas. Purification and reconstitution of cardiac Na⁺/H⁺ exchanger.
- 1989: Nephrology Research and Training Center, Department of Medicine, University of Alabama, Birmingham, Alabama (1989). Cardiac Na⁺/H⁺ exchanger is different than renal Na⁺/H⁺ exchanger.
- 1990: Division of Endocrinology/Metabolism, Department of Medicine, University of Alabama, at Birmingham, Birmingham, Alabama. Molecular Cloning of Secretogranin II.
- 1992: Hypertension Program, Department of Medicine, University of Alabama, Birmingham, Alabama. Molecular cloning and tissue distribution of angiotensin II type I receptors.
- 1992: Nephrology Research and Training Center, Department of Medicine, University of Alabama, Birmingham, Alabama. Differential expression and function of two isoforms of angiotensin II type I receptor.

- 1994: Nephrology Research and Training Center, Department of Medicine, University of Alabama, Birmingham, Alabama. Molecular cloning and regulation of gonadotropin-releasing hormone (GnRH) receptor from human pituitary.
- 1994: Department of Obstetrics and Gynecology, University of Texas, Medical School, Houston, Texas. Molecular mechanism of gonadotropin-releasing hormone (GnRH) receptor in hormone-dependent tumors.
- 1994: Dainippon Pharmaceutical Co., Ltd, Osaka, Japan. Invited guest speaker to a one day International Conference. Angiotensin II type 1 receptors: molecular cloning and gene expression.
- 1994: Osaka University, Osaka, Japan. Regulation of expression of angiotensin II type I receptors.
- 1995: School of Veterinary Medicine, Auburn University, Auburn. Cloning of Gonadotropin releasing hormone (GnRH) receptor.
- 1996: University of Alabama at Birmingham, Comprehensive Cancer Center. Gonadotropin-releasing hormone (GnRH) receptors: Bedside to Cancer.
- 1997: Plenary Session speaker, International conference on "Assisted Reproductive Technology/ Andrology", Alexandria, Egypt. Gonadotropin-releasing hormone (GnRH) receptors in reproduction and cancer.
- 1998: University of Alabama at Birmingham, Comprehensive Cancer Center. Molecular Structure and Role of Gonadotropin-Releasing Hormone (GnRH) Receptor in Tumors.
- 1998: University of Kentucky, Lexington, KY, Department of Anatomy and Neurobiology. Molecular structure and role of gonadotropin-releasing hormone (GnRH) receptor in pituitary and tumors.
- 1998: University of Alabama at Birmingham, Hypertension Program. Human Tumor Transforming Gene-a Novel Gene in Tumorigenesis.
- 1998: National Institute of Health, Endocrinology and Reproductive Research Division, Bethesda, Maryland. Gonadotropin Hormone and its Receptor: Bedside to Cancer.
- 1998: Georgetown University, Washington, D.C. Molecular Structure and Role of Gonadotropin-Releasing Hormone (GnRH) Receptor in Pituitary and Tumors.
- 1998: University of Pittsburgh, Department of Cell Biology and Physiology, Pittsburgh, PA. Molecular structure and role of gonadotropin-releasing hormone (GnRH) receptor in pituitary and tumors.
- 1998: Winship Cancer Center, Emory University School of Medicine, Atlanta, Georgia. Molecular structure and role of gonadotropin-releasing hormone (GnRH) receptor in pituitary and tumors.
- 1998: Department of Obstetrics and Gynecology, Emory University School of Medicine, Atlanta, Georgia. Gonadotropin-releasing hormone receptor-a G-protein coupled receptor.
- 1999: University of Alabama at Birmingham, Department of Physiology and Biophysics. Molecular structure and role of gonadotropin-releasing hormone (GnRH) receptor in pituitary and tumors.

- 1999: Guest speaker, Special Symposia on “Molecular Aspects of Human Reproduction”, 10th World Congress on Human Reproduction, Bahia, Brazil. Tumorigenesis of Ovarian Tumors.
- 1999: Guest speaker, Special Symposia on “Molecular Aspects of Human Reproduction”, 10th World Congress on Human Reproduction, Bahia, Brazil. Molecular Physiology of Gonadotropin Releasing Hormone (GnRH) Receptor in Reproduction.
- 1999: Department of Medicine, Brown Cancer Center, University of Louisville, Louisville, KY. Gonadotropin-releasing hormone (GnRH) receptor: a potential candidate for anticancer drugs.
- 1999: Southern Research Institute, Birmingham, Alabama. Human tumor transforming gene (HTTG), a novel gene in human tumorigenesis.
- 1999: Astra Zeneca Pharmaceuticals, Manchester, UK. Gonadotropin-releasing hormone receptor: a potential target for drug discovery.
- 2000: Department of Oncology/Cancer Center, Huges Institute, St Paul, Minnisota. Human tumor transforming gene: a potential candidate in human tumorigenesis.
- 2000: Department of Biochemistry and Molecular genetics, University of Louisville. Mechanisms of PTTG in tumorigenesis.
- 2000: James Graham Brown cancer Center, University of Louisville. Role of PTTG in initiation of tumors.
- 2000: Division of Endocrinology and Metabolism, University of Louisville. Recent development of GnRH analogs for the treatment of hormone dependent tumors.
- 2001: James Graham Brown Cancer Center, University of Louisville. Secetogranin in storage of secretory proteins.
- 2001: Department of Physiology and Biophysics, University of Louisville. PTTG in tumor invasion and angiogenesis.
- 2001: Center for Genetics and Molecular Medicine, University of Louisville.
- 2001: Division of Endocrinology and Metabolism, University of Louisville.
- 2003: James Graham Brown Cancer Center, university of Louisville.
- 2003: Steven Research Institute, New York. Securin and tumor.
- 2003: Division of Endocrinology and Metabolism, University of Louisville.
- 2004: CGEM center, University of Louisville.
- 2005: 10th International conference on oncology, Crete, Greece. Securin as a molecular target for cancer treatment.
- 2006: James Graham Cancer Center, Chemoprevention Program, University of Louisville. Securin in tumorigenesis and cancer prevention.
- 2006: International Society of Oxygen Transport to Tissues “LHRH targeted therapy for breast cancer”

- 2007: Medical Oncology/Hematology, James Graham Brown Cancer Center. Suppression of lung cancer with siRNA targeting PTTG.
- 2007: 12th World Congress on Advances in Oncology, 10th International Symposium on Molecular Medicine. Crete, Greece. Securin secures tumor angiogenesis and metastasis.
- 2007: 12th World Congress on Advances in Oncology, 10th International Symposium on Molecular Medicine. Crete, Greece. Nanoparticles-LHRH receptor targeted therapy for breast cancer.
- 2007: Division of Endocrinology and Metabolism, University of Louisville. Securin an important gene in tumor initiation and progression.
- 2007: 2nd International Symposium on Translational Research, Natural products and Cancer. Lonavala, India. Depletion of Securin in Tumor Cells Suppresses Tumor Angiogenesis and Metastasis (Dec 11, 2007).
- 2008: Department of Biochemistry and Molecular Biology, University of Louisville. Emerging role of securin in biology and cancer (March 10, 2008).
- 2008: Division of Endocrinology and Metabolism, University of Louisville. Implication of nanotechnology in treatment of cancer (April 10, 2008).
- 2008: Nanotechnology Symposium: Advances in Nanotechnology and Applications October 3 to 4, 2008. Sullivan University, Louisville. Implication of gold nano particles in the treatment of ovarian cancer.
- 2008: 13th International Congress of Endocrinology, Nov 08-12, 2008. Rio de Janeiro, Brazil. LHRH peptide receptor for targeted therapy for ovarian cancer.
- 2008: International Conference on Translational Pharmacology and 41st Annual Conference of Indian Pharmacology, December 18-20, 2008. Delhi, India. Securin regulates tumor angiogenesis and metastasis.
- 2008: International Symposium on Prognostic and Predictive Factors in Cancer management. Dec 15-16, 2008. Lucknow, India. Targeted Therapy for Cancer.
- 2008: Society of Biological Chemists (India) Karnal Chapter and National Dairy Research Institute, Karnal, India. Dec 22nd, 2008. Securin and Tumorigenesis.
- 2009: Division of Endocrinology and Metabolism, University of Louisville. Sensitivity of miRNA in ovarian cancer. (April 27, 2008).
- 2009: James Graham Brown Cancer Center, University of Louisville. Role of securin in tumor angiogenesis and metastasis. (May 10, 2009).
- 2009: Medical Oncology/Hematology Fellowship Research seminar Series/Journal Club. Small interfering RNA and Cancer. (Feb 10, 2009).
- 2009: 2nd Nanotechnology Symposium: Advances in Nanotechnology and Applications October 9 to 10, 2009. Sullivan University, Louisville. Implication of LHRH receptor mediated targeted therapy for treatment of ovarian cancer.

- 2010: Division of Endocrinology and Metabolism, University of Louisville. Endocrine Aspects of Ovarian Cancer. May 19, 2010.
- 2010: International Conference of Entrepreneurship, June 26, 2010. Step by step advancement of technology from start to success.
- 2011: Targeted therapy for ovarian cancer treatment, May 2011. Exomedicine Institute, Lexington, KY
- 2011: Division of Endocrinology and metabolism, University of Louisville. Metabolic profiles of ovary and ovarian cancer. April 27, 2011.
- 2011: Targeting ovarian cancer with LHRH and doxorubicin conjugated gold nanoparticles. Fourth Annual Nanotechnology and Nanomedicine Symposium. Sullivan University.
- 2011: Combination strategies for the treatment of cancer, International symposium on recent oncological advances in clinical disorders, Shri Guru Ram Rai Institute of medical and health Sciences, Dehradun, India.
- 2012: Combination of withaferin A with doxorubicin reduces myocardial toxicity induced by doxorubicin. Department of Physiology and Biophysics, University of Louisville.
- 2012: Combination strategies for the management of ovarian cancer. Division of Endocrinology and Metabolism, University of Louisville.
- 2012: Combination Therapy for Ovarian Cancer. James Graham Brown Cancer Center, University of Louisville.
- 2012: Step by step development of a pharmaceutical drug. Sullivan University, College of Pharmacy.
- 2012: Invited speaker: 5th annual nanotechnology and nanomedicine symposium, Sullivan University, College of Pharmacy. Combining withaferin A (WFA) with doxorubicin synergizes antitumor effect through a novel mechanism in ovarian cancer.
- 2013: Combination strategy for the treatment of ovarian cancer. Special guest speaker, Institute of Molecular drug designing and diversity (IMD3), University of Louisville, Annual symposium.
- 2013: Extra-pituitary functions of gonadotropin-releasing hormone and its receptors. Division of Endocrinology and Metabolism, University of Louisville.
- 2014: New Therapy for Recurrent Ovarian Cancer. Division of Endocrinology and Metabolism. University of Louisville.
- 2015: Endocrine Regulation of PTTG. Division of Endocrinology and Metabolism, University of Louisville.
- 2015: The Embryonic rest hypothesis of cancer development. James Graham Brown cancer Center, University of Louisville.
- 2016: New directions to target cancer stem cells for therapeutics purpose. Amity Institute of Biotechnology, Gurgaon, India.

- 2016: Stem Cells in Tumorigenesis. International Conference on Emerging Trends in Biomedical Sciences. Aligarh Muslim University, India.
- 2016: Novel targeting therapy for ovarian cancer. National Dairy Research Institute. India.
- 2016: Assessment of cancer stem cells in ovarian cancer: James Graham Brown Cancer Center, University of Louisville.
- 2016: Role of stem cells in oogenesis. Division of Endocrinology and metabolism, University of Louisville.
- 2017: Stem cells in regenerative medicine and cancer. James Graham Brown cancer Center, University of Louisville.
- 2017: Stem cells in regenerative medicine and diabetes. Division of Endocrinology and Metabolism, University of Louisville.
- 2018: Cancer Stem Cells: What are these and their role in tumorigenesis? Department of Biochemistry and Molecular Biology, University of Nebraska., Omaha.

BIBLIOGRAPHY:

PEER REVIEWED PUBLICATIONS:

1. **Sham. S. Kakar** and N. C. Ganguli (1979) Inhibition of motility and fructolysis of spermatozoa from buffalo and cattle by seminal plasma. *Ind. J. Exp. Biol.* 17: 210-211.
2. G. P. Chinnaiya, **Sham. S. Kakar** and N.C. Ganguli (1979) Extracellular release of transaminases from buffalo spermatozoa *Zbl. Vet. Med. (A)*. 26: 402-407.
3. H.P. Singh, **Sham. S. Kakar** and N.C. Ganguli (1979) Level of marker enzymes in spermatogenesis on administration of PGF alpha in rats. *Experientia* 35: 1429-1430.
4. **Sham. S. Kakar** and N.C. Ganguli (1979) Inhibition of proteolytic enzymes by buffalo and cattle seminal plasma. *Ind. J. Exp. Biol.* 16:1079-1080.
5. N.C. Ganguli and **Sham. S. Kakar** (1980) On the leakage of acrosomal hyaluronidase from buffalo spermatozoa (*Bibulous bubalis*). *Reprod. Nutr. Dev.* 20: 20593-599.
6. N.C. Ganguli and **Sham. S. Kakar** (1980) Status of acrosomal hyaluronidase in cattle semen during preservation. *Zbl. Vet. Med. (a)*. 27:221-227.
7. **Sham. S. Kakar** and S. R. Anand (1981) Changes in adenosine 5'- triphosphate, Adenylate energy charge and adenosine 3', 5'-cyclic monophosphate during the freezing of buffalo semen. *J. Reprod. Fertil.* 62: 543-548.
8. **Sham. S. Kakar** and S. R. Anand (1981) Changes in adenosine 5'-triphosphate, adenylate energy charge and adenosine 3', 5'-cyclic monophosphate during the freezing of buffalo semen. *J. Reprod. Fertil.* 62: 543-548.
9. **Sham. S. Kakar** and S. R. Anand (1984) Transmission electron-microscopic study of fresh and frozen buffalo spermatozoa. *Ind. J. Exp. Biol.* 22: 11-17.
10. **Sham. S. Kakar** and S. R. Anand. (1984) Acrosomal damage and enzyme leakage during freeze preservation of buffalo spermatozoa. *Ind. J. Exp. Biol.* 22: 5-10.
11. Joseph S. Tash, **Sham S. Kakar** and Anthony R. Means (1984) Flagellar motility

- requires the cAMP-dependent phosphorylation of a heat-stable NP-40-soluble 56 Kd protein, Axonin. *Cell* 38:551-559.
12. Wu-hsing Huang, **Sham S. Kakar** and A. Askari (1985) Mechanism of detergent effects on membrane-bound (Na^+K^+)-ATPase. *J. Biol. Chem.* 260: 7356-7361.
 13. **Sham S. Kakar**, W.-H. Huang and A. Askari (1985) (Na^+K^+)-ATPase: Coexistence of two ATP sites on the ouabain-complexed enzyme. *Biochemistry Int.* 11: 611-616.
 14. W.-Huang, **Sham S. Kakar** and A. Askari (1986) Activation of (Na^+K^+) -ATPase by long-chain fatty acids and fatty acyl coenzyme A. *Biochemistry Int.* 12: 521-528.
 15. Ronald L. Mellgren, Richard D. Lane and **Sham S. Kakar** (1987) A sarcolemma-associated inhibitor is capable of modulating calcium dependent proteinase activity. *Biochem. Biophys. Acta* 930:370-377.
 16. Ronald L. Mellgren, Richard D. Lane and **Sham S. Kakar** (1987) Isolated bovine myocardial sarcolemma and sarcoplasmic reticulum vesicles contain tightly bound calcium dependent protease inhibitor. *Biochem. Biophys. Res. Commun.* 142: 1025-1031.
 17. **Sham S. Kakar**, W.-H. Huang and A. Askari (1987) Control of cardiac sodium pump by long-chain acyl coenzyme A. *J. Biol. Chem* 262: 42-45.
 18. **Sham S. Kakar**, W.-H. Huang and A. Askari. (1988) Properties of the Na^+ , K^+ , and ATP binding sites of the ouabain-complexed (Na^+K^+)-ATPase: Implication for the mechanism of ouabain action. *Prog. Clin. Biol. Res.* 268: 211-218.
 19. W.-H. Huang, Z. Xie, **Sham S. Kakar** and A. Askari (1988) Control of the sodium pump by liponucleotides and unsaturated fatty acids: side-dependent effects in red cells. *Prog. Clin. Biol. Res.* 268:401-407.
 20. W.-H. Huang, **Sham S. Kakar**, S.M. Periyasamy and A. Askari (1988) Use of cross-linking reagents for the detection of subunit interactions of the membrane-bound (Na^+K^+)-ATPase. *Methods in Enzymol.* 156: 345-350.
 21. **Sham S. Kakar**, F. Mahdi, X. Li and Keith D. Garlid (1989) Reconstitution of the mitochondrial non-selective Na^+/H^+ (K^+/H^+) antiporter into proteoliposomes. *J. Biol. Chem.* 264: 5846-5851.
 22. Amir Askari, **Sham S. Kakar** and W.-H. Huang (1988) Ligand binding sites of the ouabain-complexed (Na^+K^+)-ATPase. *J. Biol. Chem.* 263: 211-218.
 23. S. M. Periyasamy, **Sham S. Kakar**, K. D. Garlid, and A. Askari (1990) Ion specificity of cardiac sarcolemmal Na^+/H^+ antiporter. *J. Biol. Chem.* 265: 6035-6041.
 24. **Sham S. Kakar**, J.C. Sellers, D.C. Devor, L.C. Musgrove and Jimmy D. Neill (1992) Angiotensin II Type-1 receptor subtype cDNAs: Differential tissue expression and hormonal regulation (Cloning and expression of angiotensin II type 1B receptor). *Biochem. Biophys. Res. Commun.* 183: 1090-1096.
 25. **Sham S. Kakar**, L.C. Musgrove, D.C. Devor, J.C. Sellers and J.D. Neill (1992) Cloning, sequencing, and expression of human gonadotropin releasing hormone (GnRH) receptor. *Biochem. Biophys. Res. Commun.* 189: 289-295.

26. **Sham S. Kakar**, Kristen K. Reil and Jimmy D. Neill (1992) Differential expression of angiotensin II receptor subtype mRNAs (AT-1A and AT-1B) in the brain. *Biochem. Biophys. Res. Commun.* 185: 688-692.
27. **Sham S. Kakar**, C.H. Rahe and J.D. Neill (1993) Molecular cloning, sequencing, and characterizing the bovine receptor for gonadotropin releasing hormone (GnRH) receptor. *Doest. Aim. Endocr.* 10: 335-342.
28. Sham S. Kakar, N. Wei, J.J. Mulchahey, R.D. LeBoeuf and J.D. Neill (1993) Regulation of expression of secretogranin II mRNA in female rat pituitary and hypothalamus (Molecular cloning, sequence analysis and regulation of expression of secretogranin II). *Neuroendocrinology* 57: 422-431.
29. **Sham S. Kakar**, William E. Grizzle and Jimmy D. Neill (1994). Human GnRH receptors are identical in pituitary and in breast and ovarian tumors. *Mol. Cell. Endocrinol.* 106: 145-149.
30. **Sham S. Kakar** and Deodutta Roy (1994). Curcumin inhibits c-fos, c-jun and c-myc protooncogenes messenger RNAs expression in TPA promoted mouse skin tumor. *Cancer Let.* 87: 85-89.
31. **Sham S. Kakar**, L.C. Musgrove, D.C. Devor, J.C. Sellers and J.D. Neill. 1994) Molecular cloning and regulation of gene expression of rat gonadotropin releasing hormone (GnRH) receptor. *Mol. Cell. Endocrinol.* 101: 151-157.
32. **Sham S. Kakar** and Lothar Jennes (1995) Expression of gonadotropin-releasing hormone and gonadotropin-releasing hormone receptor mRNAs in various non-reproductive human tissues. *Cancer Let.* 98: 57-62.
33. **Sham S. Kakar** and Jimmy D. Neill (1995) The human gonadotropin releasing hormone (GnRH) receptor gene maps to chromosome 4q13. *Cytogent. Cell Genet.* 70: 211-214.
34. Gabriele Irmer, Christiane Burger, Rolf Ortmann, Ursula Peter, **Sham S. Kakar**, Jimmy D. Neill, Klaus Schulz and Gunter Emons (1995) Luteinizing hormone releasing hormone as an autocrine regulator of human ovarian epithelial carcinoma. *Cancer Res.* 55: 817-822.
35. Niamin Wei, **Sham S. Kakar** and J.D. Neill (1995) Measurement of secretogranin II release from individual adenohypophysial gonadotropes using a reverse hemolytic plaque assay. *Am. J. Physiol.* 268: E145-E152.
36. Jacek Pinski, Najib Lamharzi, Gabor Halmos, Kate Groot, Andreas Jungwirth, Manuel Vadillo-Buenfil, **Sham S. Kakar** and Andrew V. Schally (1996) Chronic administration of luteinizing hormone-releasing hormone (LHRH) antagonists Cetrorelix decreases gonadotropin responsiveness and pituitary LHRH receptor mRNA levels. *Endocrinology* 137: 3430-3436.
37. **Sham S. Kakar** (1997) Molecular structure of the human gonadotropin-releasing hormone receptor gene. *Eup J Endocrinol* 137: 183-192.
38. **Sham S. Kakar**, Sati Nath, Jason Bunn and Lothar Jennes (1997) The inhibition of growth and down-regulation of gonadotropin releasing hormone (GnRH) receptor in alpha T3-1 cells by GnRH agonist. *Anti-Cancer Drugs* 8: 369-375.

39. **Sham S. Kakar** (1998) Inhibition of growth and proliferation of EcRG293 cell line expressing high affinity gonadotropin-releasing hormone (GnRH) receptor under the control of an inducible promoter by GnRH agonist (D-Lys6)GnRH and antagonist (Antide). *Cancer Research* 58: 4558-4560.
40. **Sham S. Kakar** (1998) Assignment of the human tumor transforming gene to human chromosome band 5q35.1 by fluorescence in situ hybridization. *Cytogenet Cell Genet.* 83: 93-95.
41. **Sham S. Kakar** and Lothar Jennes (1999) Molecular cloning and characterization of the tumor transforming gene (TUTR1): a novel gene in human tumorigenesis. *Cytogenet Cell Genet.* 84: 211-216.
42. **Sham S. Kakar** (1999) Molecular cloning, genomic organization, and identification of the promoter for the human pituitary tumor transforming gene (PTTG). *Gene.* 240: 317-324.
43. Leilei Chen, Rashmi Puri, Elliot J. Lefkowitz and **Sham S. Kakar** (2000) Identification of the human pituitary transforming gene (hPTTG) family: molecular structure, expression, and chromosomal localization. *Gene.* 248: 41-50.
44. Lothar Jennes, Iantha Williams, Nara S. Reddy and **Sham S. Kakar** (2000) Expression of the human gonadotropin-releasing hormone (GnRH) receptor in Sf9 Cells using baculovirus expression system. *Current Knowledge in Reproductive Medicine.* 11-19
45. Rashmi Puri, Albert Tousson A, Leilei Chen and **Sham S. Kakar** (2001) Molecular cloning of pituitary transforming gene 1 (PTTG1) from ovarian tumors and its expression in tumors. *Cancer Let* 163: 131-139.
46. **Sham S. Kakar**, Leilei Chen, Rashmi Puri, Shawn E. Flynn and Lothar Jennes (2001) Characterization of a polyclonal antibody to human tumor transforming gene 1 (PTTG1) protein. *J Histochem Cytochem* 49: 1537-1546.
47. **Sham S. Kakar**, M. Tariq Malik and Stephen J. Winters (2002) Gonadotropin-releasing hormone receptor: cloning, expression and transcriptional regulation. *Progress in Brain Research.* 141: 129-147.
48. **Sham S. Kakar**, Stephen J. Winters, Wolfgang Zacharias, Donald M. Miller and Shawn Flynn (2003) Identification of distinct gene expression profiles associated with treatment of L \square T2 cells with gonadotropin-releasing hormone agonist using cDNA microarray analysis. *Gene.* 308: 67-77.
49. Yohei Okadam Akiko Murota-Kawano, **Sham S. Kakar** and Stephen J Winters (2003) Evidence that GnRH-II stimulates LH and FSH secretion from monkey pituitary cultures by activating the GnRH-1 receptor. *Biol Reprod.* 69: 1356-1361.
50. Amy Clem, Tariq Hamid and **Sham S. Kakar** (2003) Characterization of the role of Sp1 and NF-Y in differential regulation of PTTG/Securin expression in tumor cells. *Gene.* 322: 113-121.
51. Tariq Hamid and **Sham S. Kakar** (2004) PTTG/securin activates expression of p53 and modulates its function. *Molecular Cancer* 3(18): 1-13.

52. Tariq Hamid, Tariq Malik and **Sham S. Kakar** (2005) Ectopic expression of PTTG1/securing promotes tumorigenesis in human embryonic kidney cells. *Mol Cancer* 4(1): 1-13.
53. Alvin Thompson and **Sham S. Kakar** (2005) Insulin and IGF-1 regulate the expression of the pituitary tumor transforming gene (PTTG) in breast tumor cells. *FEBS Let.* 579: 3195-3200.
54. Williard Mazhawidza, Stephen J. Winters, Ursula B. Kaiser and **Sham S. Kakar** (2006) Identification of genes modulated by activin in LbT2 cells using DNA microarray analysis. *Histol Histopath* 21: 167-178.
55. **Sham S. Kakar** and Mohammad T. Malik (2006) Suppression of lung cancer with siRNA targeting PTTG. *Int J Oncology* 29: 387-395.
56. Mohhamad T. Malik and **Sham S. Kakar** (2006) Regulation of angiogenesis and invasion by human pituitary tumor transforming gene (PTTG) through increased expression and secretion of matrix metalloproteinase-2 (MMP-2). *Molecular Cancer*. 5: 61.
57. C. Cristina, G.S. Diaz-Torga, R.G. Goya, S.S. **Kakar** SS, M.I. Perez-Millan, V. Q. Passos and D. Giannella-Neto D (2007) Bronstein MD. Becu-Villalobos D. PTTG expression in different experimental and human prolactinomas in relation to dopaminergic control of lactotropes. *Molecular Cancer*. 6:4.
58. Shahenda M. El-Naggar, Mohhamad T. Malik, Alvin Martin, Joseph P. Moore, Marry Proctor, Tariq Hamid and **Sham S. Kakar** (2007) Development of cystic glandular hyperplasia of the endometrium in MISIR-PTTG transgenic mice. *Journal of Endocrinology*. 194 (1): 179-191.
59. Shahenda El-Naggar, Mohammed T. Malik and **Sham S. Kakar** (2007). Small interfering RNA against PTTG: A novel therapy for ovarian cancer. *International Journal of oncology*. 31(1): 137-143.
60. Stephen J. Winters, Dushan Ghooray, Yasuhisa Fusii, Joseph P. Moore Jr, Jennifer R. Nevitt and **Sham S. Kakar** (2007) GnRH activates follistatin through cyclic AMP signaling. *Molecular and Cellular Endocrinology*. 271(1, 2): 45-54.
61. **Sham S. Kakar**, Hanzhu Jin, Bin Hong, John W. Eaton, Kyung A. Kang (2008) LHRH targeted therapy for breast cancer. *Adv Exp Med Biol*. 614: 285-296.
62. Hanzhu Jin, Bin Hong, **Sham S. Kakar** and Kyung A. Kang (2008) Tumor specific nano-entities for optical and hyperthermia treatment. *Adv Exp Med Biol*, 614: 275-284.
63. Siva K. Panguluri and **Sham S. Kakar** (2008) Identification of differentially expressed molecular markers for breast cancer diagnosis by cDNA-RAPD. *Current Trends in Biotechnology and Pharmacy* 2: 158-171.
64. Tariq Hamid, M. T. Malik, Robert P. Millar and **Sham S. Kakar** (2008) Protein kinase A (PKA) serves as a primary pathway in activation of Nur77 expression by gonadotropin releasing hormone (GnRH) in LbT2 cells. *International Journal of Oncology*. 33: 1055-1064.

65. Siva K. Panguluri and **Sham S. Kakar** (2009) Effect of PTTG on endogenous gene expression in HEK 293 cells. *BMC Genomics*. 10: 577.
66. Miranda Y. Fong, Jonathan J. McDunn J and **Sham S. Kakar** (2011) Identification of metabolites in the normal ovary and their transformation in primary and metastatic ovarian cancer. *PLoS One*. 6(5):e19963. Epub 2011 May 19.
67. Parag P. Shah and **Sham S. Kakar** (2011) Pituitary tumor transforming gene induces epithelial to mesenchymal transition by regulation of Twist, Snail, Slug, and E-cadherin. *Cancer Letters*. 311: 66-76.
68. Smriti Kumar, Arooshi Kumar, Parag P. Shah, Shesh N. Rai and **Sham S. Kakar** (2011) MicroRNA signature of cis-platin resistant vs. cis-platin sensitive ovarian cancer cell lines. *Journal of Ovarian Research*. 4(1): 17.
69. Parag P. Shah, Miranda Y. Fong and **Sham S. Kakar** (2011) PTTG induces EMT through integrin AlphaV Beta3-focal adhesion kinase signaling in lung cancer cells. *Oncogene*. Nov 14. doi: 10.1038/onc.2011.488. [Epub ahead of print].
70. Panguluri SK, **Kakar SS** (2012) Using quantitative real-time reverse transcriptase polymerase chain reaction to validate gene regulation by PTTG. *Methods Mol Biol*. 815:131-45.
71. Fong MY, Jin S, Gupta R, Rane M and **Kakar SS** (2012) Withaferin A enhances the therapeutic effect of doxorubicin through ROS-mediated autophagy in ovarian cancer. *PLoS One*. 7(7):e42265.
72. **Kakar SS** and Fong MY (2012) Synergistic cytotoxic action of cisplatin and withaferin A on ovarian cancer cell lines. *Biochem Biophys Res Commun*. 423: 819-825.
73. Fong MY, Farghaly HI and **Kakar SS** (2012) Tumorigenic potential of pituitary tumor transforming gene (PTTG) in vivo investigated using a transgenic mouse model, and effects of cross breeding with p53 (+/-) transgenic mice. *BMC Cancer*. 12: 532.
74. Fong MY, McDunn J and **Kakar SS** (2013) Mass spectrometry for the identification of global metabolomics in ovarian carcinomas. *Methods Mol Biol*. 1049:239-53.
75. Ratajczak MZ, Jadczyk T, Schneider G, **Kakar SS** and Kucia MJ (2013) Induction of a tumor-metastasis-receptive microenvironment as an unwanted and underestimated side effect of treatment by chemotherapy or radiotherapy. *J Ovarian Res*. 6(1):95.
76. Beach A, Huang-Ge Zhang H-G, Mariusz Z Ratajczak MZ and **Kakar SS** (2014) Exosomes: An overview of biogenesis, composition and role in ovarian cancer. *J Ovarian Res*. 7:14
77. Macha MA, Rachagani S, Pai P, Gupta S, Lydiatt WM, Smith RB, Johansson SL, Lele SM, **Kakar SS**, Lee JH, Meza J, Ganti AK, Jain M, Batra SK (2014) MUC4 regulates cellular senescence in head and neck squamous cell carcinoma through p16/Rb pathway. *Oncogene*. 2014 Apr 21. doi: 10.1038/onc.2014.102. [Epub ahead of print]
78. Ratajczak MZ, Schneider G, Sellers ZP, Kuria M and **Kakar SS** (2014) The embryonic rest hypothesis of cancer development- an XIX century theory revised. *J Cancer Stem Cell Research*. 2:e10001.

79. Mu J, Zhuang X, Wang Q, Jiang H, Deng ZB, Wang B, Zhang L, **Kakar S**, Jun Y, Miller D, Zhang HG (2014) Interspecies communication between plant and mouse gut host cells through edible plant derived exosome-like nanoparticles. *Mol Nutr Food Res*. 2014 Jul; 58(7):1561-73.
80. Suszynska M, Poniewierska-Baran A, Gunjal P, Ratajczak J, Marycz K, **Kakar SS**, Kucia M, Ratajczak MZ (2014) Expression of the erythropoietin receptor by germline-derived cells - further support for a potential developmental link between the germline and hematopoiesis. *J Ovarian Res*. 7:66.
81. **Kakar SS**, Ratajczak MZ, Powell KS, Moghadamfalahi M, Miller DM and Singh SK (2014) Withaferin A alone as well as in combination with cisplatin suppresses tumor growth and metastasis by targeting cancer stem cell population in ovarian cancer. *PLoS One*. 9 (9):e107596.
83. Mierzejewska K, Borkowska S, Suszynska E, Suszynska M, Poniewierska A, Maj M, Pedziwiatr P, **Kakar SS**, Ratajczak J, Kucia M and Mariusz Z. Ratajczak MZ (2015). Hematopoietic stem/progenitor cells express several functional sex hormone receptors - novel evidence for a potential developmental link between hematopoiesis and primordial germ cells. *Stem Cells Dev*. 15;24(8):927-37.
84. **Kakar SS** and Kakar C (2015) Generation of Transgenic Mouse Model Using PTTG as an Oncogene. *Methods Mol Biol*. 1267:395-411.
85. Gunjal PM, Schneider G, Ismail AA, **Kakar SS**, Kucia M, Ratajczak MZ (2015) Evidence for induction of a tumor metastasis-receptive microenvironment for ovarian cancer cells in bone marrow and other organs as an unwanted and underestimated side effect of chemotherapy/radiotherapy. *J Ovarian Res*. 8:20.
86. Macha MA, Rachagani S, Pai P, Gupta S, Lydiatt WM, Smith RB, Johansson SL, Lele SM, **Kakar SS**, Farghaly H, Lee JH, Meza J, Ganti AK, Jain M, Batra SK (2015) MUC4 regulates cellular senescence in head and neck squamous cell carcinoma through p16/Rb pathway. *Oncogene*. 34(21):2814.
87. Gunjal P, Pedziwiatr D, Ismail AA, **Kakar SS**, Ratajczak MZ (2015) An emerging question about putative cancer stem cells in established cell lines-are they true stem cells or a fluctuating cell phenotype? *J Cancer Stem Cell Res*. 3. pii: e1004.
88. Abdelbaset-Ismail A, Pedziwiatr D, Suszyńska E, Sluczanowska-Glabowska S, Schneider G, **Kakar SS**, Ratajczak MZ (2016) Vitamin D3 stimulates embryonic stem cells but inhibits migration and growth of ovarian cancer and teratocarcinoma cell lines. *J Ovarian Res*. 9:26.
89. **Kakar SS**, Worth CA, Wang Z, Carter K, Ratajczak M, Gunjal P (2016) DOXIL when combined with Withaferin A (WFA) targets ALDH1 positive cancer stem cells in ovarian cancer. *J Cancer Stem Cell Res*. 4. pii: e1002.
90. **Kakar SS**, Parte S, Carter K, Joshua IG, Worth C, Rameshwar, P and Ratajczak MZ (2017). Withaferin A (WFA) inhibits cancer growth and metastasis by targeting ovarian cancer stem cells. *Oncotarget*. 8: 74494-74505.

91. Schneider G, Sellers ZP, Bujko K, **Kakar SS**, Kucia M, Ratajczak MZ (2017) Novel pleiotropic effects of bioactive phospholipids in human lung cancer metastasis. *Oncotarget*. 8:58274-58263.
92. Carter K, Rameshwar P, Ratajczak MZ and **Kakar SS** (2017) Verrucarin J inhibits ovarian cancer and targets cancer stem cells. *Oncotarget*. 8: 92743-92756.
94. Parte S, Smolenkov A, Batra SK, Ratajczak MZ and **Kakar SS** (2017) Ovarian Cancer Stem Cells: Unravelling a Germline Connection. *Stem Cell Dev*. 26(24):1781-1803.
95. Bliss SA, Paul S, Pobiaryzn PW, Ayer S, Pant S, Hilton H, Sharma N, Cunha, MF, Engelberth DJ, Greco SJ, Bryan M, Kucia MJ, **Kakar SS**, Ratajczak MZ and Rameshwar P (2018) Working breast cancer cell hierarchy in treatment response and long-term outcome. *Nature Sci Rep*. 8(1):367.
96. Parte S, Ratajczak MZ and **Kakar SS** (2018) Characterization of stem cell and cancer stem cell populations in ovary and ovarian tumors. *J Ovarian Res*. 11(1):69.
97. Abdelbaset-Ismail A, Cymer M, Borkowska-Rzeszotek S, Brzeźniakiewicz-Janus K, Rameshwar P, **Kakar SS**, Ratajczak J, Ratajczak MZ (2018) Bioactive Phospholipids Enhance Migration and Adhesion of Human Leukemic Cells by Inhibiting Heme Oxygenase 1 (HO-1) and Inducible Nitric Oxygenase Synthase (iNOS) in a p38 MAPK-Dependent Manner. *Stem Cell Rev*. 2018 Oct 9. doi: 10.1007/s12015-018-9853-6.
98. **Kakar SS**, Ratajczak MZ and Virant-Klun Irma (2017) Securin a novel marker for cancer stem cells. In preparation.
99. Utoh K, Carter K and **Kakar SS** (2017) Verrucarin J target cancer stem cells through the inhibition of WNT1/β-catenin signaling pathway in lung cancer. In preparation.

INVITED REVIEWS AND BOOK CHAPTERS:

100. **Sham. S. Kakar** and N.C. Ganguli. (1978) Milk as an extender for semen preservation: A review. *Ind. J. Aim. Sci*. 48: 777-785.
101. Ronald L. Mellgren, **Sham S. Kakar** and Richard D. Lane (1990) The association of calpastatins with cellular membranes. In *Intracellular Proteolysis, Mechanisms and Regulation*. pp. 353-360 (N. Katuruma and E. Kominami, eds.) Japan Scientific Societies Press, Tokyo. Book Chapter.
102. **Sham S. Kakar** and Jimmy D. Neill. (1992) Angiotensin receptor subtypes: Cloning and expression. In *Cellular and Molecular Biology of the Renin-Angiotensin System* (M. K. Raizada, C. Sumners and M. I. Phillips, eds). pp. 293-306. CRC Press Inc. Book Chapter.
103. **Sham S. Kakar** (1995) Angiotensin II type 1 receptors: Molecular cloning and gene expression. *J. Blood Pressure*. 2: 149-165.
104. **Sham. S. Kakar** and C. H Rahe and L. Jennes (1996) Gonadotropin releasing hormone (GnRH) receptor: molecular cloning, tissue distribution and regulation of gene expression in pituitary, brain and tumor. *Molecular Andrology*. 8: 95-125.
105. **Sham S. Kakar** (1999) Molecular characterization of the gonadotropin-releasing hormone receptor gene. *Adv Reprod*. III: 59-80.

106. **Sham S. Kakar**, I. Williams and B. Hafez (1999) Gonadotropin-releasing hormone receptor: molecular parameters. *Adv Reprod. III*: 143-146.
107. **Sham S. Kakar**, Iantha Williams and Lothar Jennes (1999) Molecular physiology of the gonadotropin-releasing hormone (GnRH) receptor. *Adv Reprod. III*: 267-278.
108. **Sham S. Kakar** (1999) Tumorigenesis of ovarian tumors. *Adv Reprod. III*: 311-324.
109. S. Hafez, B. Hafez and **Sham S. Kakar** (1999) Andrology Research: physiology/clinical application. *Adv. Reprod. III*: 158-162.
110. B. Hafez, **Sham S. Kakar** and S. Hafez (1999) Andropause/premenopause/menopause: pathophysiology/clinical parameters. *Adv Reprod. III*: 179-185.
111. B. Hafez, **Sham S. Kakar** and S. Hafez (1999) Molecular biology of oviductal functions/gamete interaction. *Adv Reprod. III*: 195-201.
112. Tariq Hamid and **Sham S. Kakar** (2003) PTTG and Cancer. *Histol. Histopathol.* 18: 245-251.
113. **Sham S. Kakar**, Tariq Malik, Stephen Winters and Williard Mazhawidza (2003) Gonadotropin-releasing hormone receptors: intracellular signaling transduction mechanisms, and downstream signaling genes. *Vitamin and Hormones.* 69: 151-207.
114. Christi Bradshaw and **Sham S. Kakar** (2007) Pituitary Tumor Transforming Gene: An Important Gene in Normal Cellular Functions and Tumorigenesis. *Histol. Histopath.* 22: 219-226.
115. Siva K. Panguluri, Casey Yeakel and **Sham S. Kakar** (2008) PTTG: An important target gene for ovarian cancer therapy. *Journal of Ovarian Research.* 1:6.
116. Katherine M. Pohlgrees, Siva K. Panguluri and **Sham S. Kakar** (2009) Implication of nanoparticles in diagnosis and treatment of cancer: The future of oncology. In *Cell Death and Cancer*. Ed. Alakananda Basu; Research Signpost. Chapter 8: 145-197.
117. Marinda Y. Fong and Sham S. Kakar (2009) Ovarian cancer mouse models: A summary of current models and their limitations. *Journal of Ovarian Research.* 2:12.
118. Parag P. Shah and **Sham S. Kakar** (2009) Emerging role of microRNAs in diagnosis and treatment of various diseases including ovarian cancer. *Journal of Ovarian Research.* 2:11.
119. Parag P. Shah and **Sham S. Kakar** (2009) Nanotechnology (Small things, big minds) an overview. In *advances in nanotechnology and application*. Eds. Y.V. Pathak and H.T. Tran. Center for nanotechnology: Education, Research, & Applications (CENTERA) Sullivan University College of Pharmacy, Louisville, KY.
120. Siva K. Panguluri and **Sham S. Kakar** (2009) PTTG1 (pituitary tumor-transforming gene 1). *Gene Section. Atlas Genet Cytogenet Oncol Haematol* 13 (1): 43-46.
121. Marinda Y. Fong and **Sham S. Kakar** (2010) Role of Cancer Stem Cells and the Side Population in Epithelial Ovarian Cancer. *Histo Histopath.* 25: 113-120.
122. Sarah E. Norberto and Sham S. Kakar (2012) LHRH Luteinizing Hormone-Releasing Hormone (LHRH) Receptor Based-Targeted Therapy for Cancer Treatment. Eds. G.

Pillai and H.T. Tran. Center for nanotechnology: Education, Research, & Applications (CENTERA) Sullivan University College of Pharmacy, Louisville, KY.

123. **Parte S and Kakar SS (2018)**. Targeting of cancer stem cells in ascites cells from patients with ovarian cancer. Review article. In Preparation.

Editorial

124. Stefano Palomba, David T. Curiel, **Sham S. Kakar** and Fumikazu Kotsuji (2008). Welcome to Journal of Ovarian Research. Journal of Ovarian Research. 1:1.

Acknowledgements

125. Curiel DT, **Kakar SS**, Palomba S, Tsang BK. Journal of Ovarian Research reviewer acknowledgement 2012. J Ovarian Res. 6:16. 2013.
126. **Kakar SS**, Palomba S, Tsang BK, Curiel DT (2014) Journal of Ovarian Research reviewer acknowledgement. J Ovarian Res. 7(1):13.

ABSTRACTS (POSTER PRESENTATIONS) IN NATIONAL AND INTERNATIONAL CONFERENCES:

1. **Sham S. Kakar** and S. R. Anand. (1981) ATP content and adenylate energy charge of fresh and frozen buffalo semen. Ind. J. Biochem. Biophys. 18: 66.
2. **Sham S. Kakar**, J.S. Tash and A.R. Means (1983) Inhibition of flagellar motility requires the cAMP-dependent phosphorylation of a 55,400 Dalton protein. J. Cell. Biol. 97: 748.
3. **Sham S. Kakar**, W.-H. Huang and A. Askari (1985) Further evidence for the existence of multiple sites on Na⁺, K⁺-ATPase. Fed. Proc. 44: 2518.
4. **Sham S. Kakar**, W.-H. Huang and A. Askari (1986) Regulation of NaK-ATPase by long-chain fatty acyl coenzyme A. Fed. Proc. 45: 2889.
5. **Sham S. Kakar**, W.-H. Huang and A. Askari (1987) Interaction of ouabain binding sites with Na⁺, K⁺ and ATP sites of the enzyme. Presented in the 5th International Conference on Na, K-ATPase, at Aarhus, Denmark, 14-19 June, 1987.
6. W.-H. Huang, Z. Xie, **Sham S. Kakar** and A. Askari (1987) Control of the sodium pump by liponucleotides. Presented in the 5th International Conference on Na,K-ATPase, at Aarhus, Denmark, 14-19 June, 1987.
7. M.G. Jack, **Sham S. Kakar**, W.-H. Huang and A. Askari (1987) Mechanism of control of sodium pump by orthophosphate (P_i). Fed. Proc. 46: 361.
8. Ronald L. Mellgren, Richard D. Lane, and **Sham S. Kakar** (1987) A membrane-associated inhibitor modulates calcium-dependent proteolysis at the myocardial sarcolemma. Fed. Proc. 46: 2222.
9. S.M. Periyasamy, **S.S. Kakar**, K. Garlid and A. Askari (1988) K⁺ transport by cardiac sarcolemmal Na⁺/H⁺ antiporter. J. Cell Biol. 107: 363.
10. **Sham S. Kakar** and Keith D. Garlid (1988) Extraction and reconstitution into proteoliposomes of a mitochondrial Na⁺/H⁺ antiporter. Biophys. J. 53:507.

11. Y. H. Wang, **S.S. Kakar**, W.-H. Huang, and A. Askari (1988) Sensitivity of cardiac sodium pump to oxygen free radicals. *FASEB J.* 2: 5849.
12. X.Li, R.D. Lane, **S.S. Kakar**, and K. Garlid (1989) Preliminary immunological study of the volume-regulatory K^+/H^+ antiporter. *Biophys. J.* 53:507.
13. **S.S. Kakar**, J.J. Mulchahey, R.D. LeBoeuf, and J.D. Neill (1990) Secretogranin (SCG) II: Hormonal regulation of gene expression in rat pituitary, *J. Cell Biol.* 111: 1215.
14. **S.S. Kakar**, J.C. Sellers and J.D. Neill (1991) Characterization of the rat pituitary GnRH-receptor by expression of its mRNA in *Xenopus* oocytes. 73rd Annual Meeting of The Endocrine Society. 1696.
15. N. Wei, **S.S. Kakar** and J.D. Neill (1991) Co-regulation of adenohipophysial secretogranin II and LH \square -mRNA levels by GnRH and estradiol *in vitro*. *FASEB J.* 5:6542.
16. **S.S. Kakar**, L. C. Musgrove and J. D. Neill (1992) Human angiotensin II type 1 receptor: analysis of two RNA transcripts and chromosomal localization. *J. Cell Biol.* 1730.
17. J.D. Neill, J.C. Sellers, L.C. Musgrove and **S.S. Kakar** (1992) Angiotensin II receptor mRNA expression in pituitary during the rat estrous cycle. Ninth International Congress of Endocrinology, Nice, France.
18. N. Wei, **S.S. Kakar** and J.D. Neill (1992) Localization and secretion of secretogranin II in rat pituitary cells. *FASEB J.* 6: 1427.
19. **Sham S. Kakar**, Kristen K. Reil and Jimmy D. Neill (1992) Differential expression of angiotensin II receptor subtype mRNA (AT-1A and AT-1B) in the brain. 74th Annual Meeting of the Endocrine Society. 1527.
20. **Sham S. Kakar**, J.C. Sellers, L.C. Musgrove and J.D. Neill (1992) Angiotensin II, Type I receptor sub-types: Cloning and expression. *FASEB J.* 6:1372.
21. **S.S. Kakar**, L.C. Musgrove, J.C. Sellers and J.D. Neill (1993) Cloning and characterization of a cDNA for the rat gonadotropin-releasing hormone (GnRH) receptor. *FASEB J.* 489.
22. **S.S. Kakar**, L.C. Musgrove, J.C. Sellers and J.D. Neill (1993) Human gonadotropin releasing hormone (GnRH) receptor: Further molecular characterization. 75th Annual Meeting of the Endocrine Society. 1153.
23. **S.S. Kakar**, H.C. Rahe and J.D. Neill. (1993) Molecular cloning of bovine gonadotropin releasing hormone (GnRH) receptor. 26th Annual Meeting of the Society for the Study of Reproduction. 95.
24. J.D. Neill, L.W. Duck, J.C. Sellers, L.C. Musgrove and **S.S. Kakar** (1994) Gonadotropin/GnRH receptor desensitization and the G protein-coupled receptor kinases. The 76th Annual Meeting of the Endocrine Society. 1551.
25. K.D. Granthan, J.D. Sellers, **S.S. Kakar** and J.D. Neill (1994) The presence of secretogranin II and its mRNA in the alpha T3-1 gonadotropin cell line. 27th Annual Meeting of the Society for the Study Of Reproduction.

26. **Sham S. Kakar** and Deodutta Roy (1994) Curcumin inhibits cfos, cjun and cmyc protooncogenes messenger RNAs expression in TPA promoted mouse skin tumor. Eighty-fifth annual meeting of AACR. 3287.
27. S.S. Kakar and J.D. Neill (1995) Molecular cloning and chromosomal localization of the gene for human gonadotropin releasing hormone (GnRH) receptor. Eighty-Sixth annual meeting of AACR. 1601.
28. **S.S. Kakar**, S. Nath, D.C. Tucker, N.S. Reddy and L. Jennes (1996) Overexpression of human gonadotropin releasing hormone receptor protein in transfected Sf9 cells. Society for Neuroscience 26 th Annual Meeting.
29. S. Nath, J. Bunn and **S.S. Kakar** (1996) Gonadotropin releasing hormone (GnRH) analog inhibits the growth and proliferation of the mouse pituitary gonadotrope cell line (□T3-1). 6th International Congress on Cell Biology, San Francisco.
30. **S.S. Kakar** and J. Bunn (1996) Characterization of the 5'-flanking region of the human gonadotropin releasing hormone receptor gene. 6th International Congress on Cell Biology, San Francisco.
31. Iantha Williams and **S.S. Kakar** (1997) Identification of the promoter region for the human gonadotropin-releasing hormone (GnRH) receptor gene. UAB Comprehensive Center Annual Retreat.
32. **S.S. Kakar**, M.J. Ruppert and I. Williams (1997) Molecular cloning and characterization of the tumor transforming gene. UAB Comprehensive Center Annual Retreat.
33. **S.S. Kakar**, Jason Bunn and Lothar Jennes (1997) Production of monoclonal antibodies for the human gonadotropin releasing hormone (GnRH) receptor by using polynucleotide vaccines. XXXIII International Congress of Physiological Sciences, St. Petersburg, Russia.
34. **S.S. Kakar**, Iantha Williams and Lothar Jennes (1998) Molecular characterization of the human tumor transforming gene (HTTP). 89th Annual Meeting of American Association for Cancer Research.
35. S.S. Kakar and Iantha Williams (1998) Identification and characterization of the promoter for the human gonadotropin-releasing hormone (GnRH) receptor gene. 80th Annual Meeting of the Endocrine Society. 44A.
36. **S.S. Kakar**, L. Chen, R. Puri and L. Jennes (1998) Molecular characterization of the human tumor transforming gene in ovarian tumor. UAB Comprehensive Center Annual Retreat.
37. **S.S. Kakar**, L. Chen and R. Puri (1998) Genomic organization and chromosomal localization of the human tumor transforming gene. UAB Comprehensive Center Annual Retreat.
38. **S.S. Kakar**, L. Chen and R. Puri (1999) Genomic organization and chromosomal localization of the human tumor transforming gene. 90th Annual Meeting of American Association for Cancer Research.
39. **S.S. Kakar**, L. Chen, R. Puri and L. Jennes (1999) Molecular characterization of the human tumor transforming gene in ovarian tumor. 90th Annual meeting of American Association for Cancer Research.
40. **S.S. Kakar** and L. Jennes (1999) Tumorigenesis of ovarian tumors. 10th World Congress

on Human Reproduction, Salvador, Bahia, Brazil.

42. **S.S. Kakar** and Iantha Williams (1999) Molecular physiology of Gonadotropin-releasing hormone receptor. 10th World Congress on Human Reproduction, Salvador, Bahia, Brazil.
43. L. Chen R. Puri and **S.S. Kakar** (1999) Molecular cloning and chromosomal localization of the human tumor transforming gene (TUTR1). 81st Annual Meeting of the Endocrine Society, San Diego, California.
44. **S.S. Kakar**, R Puri and L. Chen (2000) Identification of human pituitary tumor transforming gene (hPTTG) family: molecular structure, expression and chromosomal localization. 91st Annual meeting of American Association for Cancer Research.
45. R Puri, L. Chen and **S.S. Kakar** (2000) Expression of pituitary tumor transforming gene in various human tumors detected by in situ hybridization. 82nd Annual meeting of The Endocrine Society. Toronto, Canada.
46. **S.S. Kakar**, L Chen and R Puri (2000) Further characterization of the human pituitary tumor transforming gene in human tumors. 11th International Congress of Endocrinology. Sydney, Australia.
47. M. Tariq Malik and **Sham S. Kakar** (2002) Overexpression of PTTG protein increases the expression and secretion of MMP-2 but not MMP-9. 93rd Annual meeting of the American Association for Cancer Research.
48. M. Tariq Malik, Rashmi Puri and **Sham S. Kakar** (2002) Overexpression of PTTG in HEK293 cells increases the secretion and expression of bFGF, VEGF, IL-8 and MMP-2. 84th annual meeting of the Endocrine Society.
49. Williard Mazhawidza and **Sham S. Kakar** (2002) Identification of proteins that interact with G-protein coupled receptors. 84th annual meeting of the Endocrine Society.
50. Amy Clem, Shawn Flynn and **Sham S. Kakar** (2002) Identification of promoters and enhancer sequence for the PTTG gene. 84th annual meeting of the Endocrine Society.
51. Williard Mazhawidza, Stephen Winters and **Sham S. Kakar** (2003) Identification of genes modulated by activin in LbT2 cells using DNA microarray chip analysis. 85th annual meeting of the Endocrine Society.
52. **Sham S. Kakar**, Stephen Winters, Wolfgang Zacharias, Donald M. Miller and Shawn Flynn (2003) Identification of distinct gene expression profiles associated with treatment of LbT2 cells with gonadotropin-releasing hormone agonist using microarray analysis. 85th annual meeting of the Endocrine Society.
53. Tariq Hamid, Shawn Flynn and **Sham S. Kakar** (2003) Overexpression of PTTG activates and modulates p53 expression. 85th annual meeting of the Endocrine Society.
54. Tariq Hamid and **Sham S. Kakar** (2003) Securin/PTTG regulates transcription of suppressor gene p53 in cancer. 94th Annual meeting of the American Association for Cancer Research.
55. Alvin D. Thompson III and **Sham S. Kakar** (2004) Insulin stimulates PTTG/securin expression. 95th Annual meeting of the American Association for Cancer Research. Orlando, Fl.
56. Mohammad T. Malik and **Sham S. Kakar** (2004) Type IV collagenase is regulated by

- gonadotropin-releasing hormone (GnRH) in pituitary tumor. 95th Annual meeting of the American Association for Cancer Research. Orlando, FL.
57. **Sham S. Kakar** and Mohammad T. Malik (2006) Expression of PTTG in lung cancer and its clinical significance. 88th Annual meeting of the Endocrine Society, ENDO 06. June 24-June27. Boston, MA.
 58. Mohammad T. Malik and **Sham S. Kakar** (2007) Securin secures tumor angiogenesis and metastasis. 98th Annual meeting of the American Association for Cancer Research. Los Angeles, CA.
 59. **Sham S Kakar**, Hanzhu Jin, Bin Hong, John W. Eaton and Kyung A. Kang (2006) LHRH receptor targeted therapy for breast cancer. International Society of Oxygen Transport to Tissues. Louisville, KY.
 60. Hanzhu Jin, Bin Hong, Sham S. Kakar and Kyung A. Kang (2006) Tumor specific nano-entities for optical detection and hyperthermia treatment. International Society of Oxygen Transport to Tissues. Louisville, KY.
 61. **Sham S. Kakar** and Mohammad T. Malik (2007) Securin increases tumor angiogenesis and metastasis. 89th Annual meeting ENDO 07. June 2-June 7, Toronto, Canada.
 62. **Sham S Kakar**, Hanzhu Jin, Bin Hong, John W. Eaton and Kyung A. Kang (2007) LHRH-nanopartilces as apotential targeted therapy for breast cancer. 89th Annual meeting ENDO 07. June 2-June 7, Toronto, Canada.
 63. **Sham S. Kakar**, Siva K. Panguluri and Mohammed T. Malik (2007) Securin secures tumor angiogenesis and metastasis. 12th World Congress on Advances in Oncology, 10th International Symposium on Molecular Medicine. Oct 10-Oct 12, 2007. Crete, Greece. 56.
 64. **Sham S Kakar**, Hanzhu Jin, Bin Hong, John W. Eaton and Kyung A. Kang (2007) Nanoparticles-LHRH receptor targeted therapy for breast cancer. 12th World Congress on Advances in Oncology, 10th International Symposium on Molecular Medicine. Oct 10-Oct 12, 2007. Crete, Greece.
 65. **Sham S. Kakar**, Siva K. Panaguluri and Mohammed T. Malik (2007) Depletion of securin in tumor cells suppresses tumor angiogenesis and metastasis. 2nd International symposium on translational research. Natural products and cancer. December 9-12, 2007. Lonavala, India.
 66. Katherine M. Pohlgeers, Siva K. Panguluri, Hanzhu Jin, Jianting Wang, Kyung Kang and **Sham S. Kakar** (2008) LHRH and Doxorubicin Conjugated Gold Nanoparticles for Breast Cancer Treatment. Era of Hope 2008. June 25-June 28, 2008. Baltimore, MD.
 67. **Sham S. Kakar** and Alvin Thomson (2009). Identification of an insulin responsive element in the pituitary tumor transforming gene promoter. 100th Annual Meeting of American Association for cancer Research, April 18-22, 2009. Denver, CO. A4225.
 68. Parag P. Shah, Mohammed T. Malik, Casey Yeakel and **Sham S. Kakar** (2009). The role of pituitary transforming (PTTG) gene in tumor growth and angiogenesis. 100th Annual Meeting of American Association for Cancer Research, April 18-22, 2009. Denver, CO. A4225.
 69. Alvin Thomson, Betty Villafuerte and **Sham Kakar** (2009). Insulin-Induced Expression of the Pituitary Tumor Transforming Gene is Mediated via the Insulin Responsive Element.

Research Louisville, Oct 12 to Oct 16, 2009.

70. Allison Beach, Madhavi Rane and **Sham Kakar** (2009). Exosomal Proteins for the Diagnosis of Ovarian Cancer. Research Louisville, Oct 12 to Oct 16, 2009.
71. Miranda Fong, **Sham S. Kakar**, Madhavi J. Rane (2009). PTTG-induced Akt1 Activation in Epithelial Ovarian Cancer. Research Louisville, Oct 12 to Oct 16, 2009.
72. Parag P. Shah, Siva K. Panguluri, Mohammad T. Malik and **Sham S. Kakar** (2009). Epithelial to Mesenchymal Transition: Role of PTTG and Transcription Factors Twist, Snail, Slug and E-cadherin. Research Louisville, Oct 12 to Oct 16, 2009.
73. **Sham Kakar**, Arooshi Kumar, Rajita Kumar and Parag Shah (2009). Differential Expression of MicroRNAs in Cisplatin Sensitive and Insensitive Ovarian Tumor Cell Lines. Research Louisville, Oct 12 to Oct 16, 2009.
74. Sarah Norberto and **Sham Kakar** (2009). LHRH-Mediated Drug Delivery for Ovarian Cancer Treatment. Research Louisville, Oct 12 to Oct 16, 2009.
75. Sarah E. Norberto and **Sham S. Kakar** (2009). LHRH-Mediated drug delivery for ovarian cancer treatment. Second annual nanotechnology symposium. Advances in nanotechnology and applications. Sullivan University, Louisville. Oct 9 to 10, 2009.
76. Saurabh Gupta, Ramesh Gupta and **Sham S. Kakar** (2010) Withaferin (WFA) inhibits ovarian tumor cell proliferation and growth. Research Louisville, Oct 12 to Oct 16, 2010.
77. **Sham S. Kakar**, Youling Yuan, Gary Degen, Joshua Sickles, Cohin Kakar and David Noack (2011) LHRH-Mediated drug delivery for ovarian cancer treatment. Kentucky Science and Technology Corporation Symposium, Louisville, KY.
78. Miranda Y. Fong, Jonathan J. McDunn J and **Sham S. Kakar** (2011) Identification of metabolites in the normal ovary and their transformation in primary and metastatic ovarian cancer. 102nd Annual Meeting of American Association for cancer Research, April 10-14. Orlando, FL.
79. Kateryna Komarovskiy, Hanan Farghaly and **Sham Kakar** (2011) Application of biomarkers panel as a new markers for thyroid cancer. Research Louisville, Oct 10 to 14, Louisville, KY.
80. Siva K. Panguluri, Smriti Kumar*, Arooshi Kumar*, Parag P. Shah, Shesh N. Rai and **Sham S. Kakar** (2011). Identification of regulatory RNAs (MicroRNA) in Cis-platin resistant ovarian cancer cell lines A2780/CP70. Brown Cancer Center Retreat, Louisville, KY.
81. Emeka Nwaneri, Ramesh Gupta and **Sham S. Kakar** (2011) The Synergistic apoptotic effect of cis-platin and withaferin A on ovarian cancer cells. Brown cancer Center Retreat, Louisville, KY.
82. Miranda Y. Fong, Ramesh Gupta, and **Sham S. Kakar** (2011) Withaferin A enhances the therapeutic activity of doxorubicin through autophagy in ovarian cancer. Brown cancer Center Retreat, Louisville, KY.
83. **Sham S. Kakar**, Ramesh Gupta and Miranda Fong (2011) A novel combination of doxorubicin and withaferin A for the treatment of ovarian cancer. International Symposium on Recent Advances in Clinical Disorders (SGRRIMHS), Dehradun, India.

84. Miranda Y. Fong, Shunying Jin, Ramesh Gupta, Madhavi Rane, and **Sham S. Kakar** (2012). Withaferin enhances the therapeutic effect of doxorubicin on ovarian cancer. IMD3 symposium, University of Louisville. March 2012.
85. **Sham S. Kakar**, Ramesh Gupta and Miranda Fong (2012) Withferin sensitizes ovarian cancer cells for cisplatin treatment. IMD3 symposium, University of Louisville.
86. **Sham S. Kakar**, Ramesh Gupta and Miranda Fong (2012) Combination startegies for management of ovarian cancer using doxorubicin and withferin A (2012). American Association for cancer Research. AACR Annual Meeting 2012. A2765.
87. **Sham S. Kakar** (2012) Targeted delivery of medication to cancer cells. 14th Annual SBIR/STTR, and Kentucky Innovation Annual Conference. May 30 to June 1, 2012. Louisville, KY.
88. Miranda Y. Fong, Shunying Jin, Madhavi Rane, Raj K. Singh, Ramesh Gupta, **Sham S. Kakar** (2012) Combining withaferin A (WFA) with doxorubicin synergizes antitumor effect through a novel mechanism in ovarian cancer. 5th annual nanotechnology and nanomedicine symposium, Sullivan University, College of Pharmacy, Louisville, KY.
89. Muzafar A. Macha, Satyanarayana Rachagani, Priya Pai, Maneesh Jain, Williams M. Lydiatt, Russell B. Smith, Sonny Johansson, Subodh M. Lele, **Sham S. Kakar**, Farghaly H. Ibrahim, John H. Lee, and Surinder K. Batra (2013) MUC4 Knockdown induces cellular Senescence in Head and Neck Cancer cells. AACR Annual Meeting.
90. Sham S. Kakar
AACR anuual meeting
91. Malwina Suszynska, Kasia Mierzejewska Agata Poniewierska-Baran, Sylwia Borkowska, Pranesh Gunjal, Janina Ratajczak, **Sham S. Kakar**, Magda Kucia & Mariusz Z. Ratajczak (2014) Novel evidence that functional gonadotropic hormone receptors are expressed by hematopoietic cells and, vice versa, that functional erythropoietin receptor (EpoR) is expressed by germline-derived cells—how much more data is needed to support a developmental link between the germline and hematopoiesis? American Society of Hematology Annual Meetingm San Francisco.
92. Pranesh Gunjal, Gabriela Schneider, **Sham S. Kakar**, Magda Kucia & Mariusz Z. Ratajczak (2014) Evidence for induction of a tumor-metastasis-receptive microenvironment in bone marrow and other organs as an unwanted and underestimated side effect of chemotherapy/radiotherapy. American Society of Hematology Annual Meeting, San Francisco.
93. Malwina Suszynska, Katarzyna Mierzejewska, Agata Poniewierska-Baran, Ahmed Abdelbasit Ismail, Gabriela Schneider, Pranesh Gunjal, Janina Ratajczak, **Sham S. Kakar**, Magda Kucia, Mariusz Z. Ratajczak (2015) Embryonic rest hypothesis of cancer development revisited: functional gonadotropic hormone receptors are expressed by normal and malignant hematopoietic cells and functional erythropoietin receptor is expressed by germline-derived tumors. AACR Annual meeting. A4072.
94. Sham S. Kakar, Mariusz Z. Ratajczak (2016) Targeting cancer stem cells in ovarian cancer. AACR Annual Meeting. A3332.

95. Kelsey Carter, Seema Parte, Surinder K. Batra, Mariusz Z. Ratajczak, Sham S. Kakar (2017) Verrucarin J targets both cancer cells and cancer stem cells. AACR Annual Meeting.

Some abstracts presented are missing

PRESS RELEASE/COVERAGE (Only few are listed)

New York Times:

<http://boss.blogs.nytimes.com/2010/03/16/mcginis-venture-competition-winners-2010/>

Business First of Louisville:

<http://louisville.bizjournals.com/louisville/stories/2010/03/15/daily8.html>

*<<http://louisville.bizjournals.com/louisville/stories/2010/03/15/daily8.html>>

Courier Journal

<http://www.courier-journal.com/article/20100315/BUSINESS/303150046/U%20of%20L%20students%20win%20business%20plan%20competition>

WorldNews

http://article.wn.com/view/2010/03/15/NanoMark_wins_Carnegie_Mellon_competition/

MSN Money Central

<http://news.moneycentral.msn.com/provider/providerarticle.aspx?feed=ACBJ&date=20100315&id=11248264>

USAToday

<http://content.usatoday.com/topics/article/Organizations/Schools/Carnegie+Mellon+University/06jn4to3jo2ps/1>

*India Times:

<http://oneclick.indiatimes.com/article/06jn4to3jo2ps?q=Indian+Institute+of+Technology>

Ovarian Cancer and US

<http://ovariancancerandus.blogspot.com/2010/03/nanomark-therapeutics-website.html>

Portland Business Journal

http://portland.bizjournals.com/portland/related_content.html?topic=NanoMark%20Therapeutics

NVC

http://www.oregonnvc.com/App_Aspx/Winners.aspx

Louisville Magazine

http://loumag.epubxpress.com/wps/portal/lou/c0/04_SB8K8xLLM9MSSzPy8xBz9CP0os3iLkCAPEzcPIwMDQ0dHA6OQUK8QR0NPI3cPI_1I_ShznPIuBvohIBMz9SPNDawsQcxi_UgDEF2gH2liCBbILy1KTtWPLE5NLErO0C_ITkyqSk2qcnRUVAQA2PTcJw!!/

Entrepreneur Magazine Oct 2010

<http://entrepreneur.coverleaf.com/entrepreneuriphone11/201010?pg=89#pg89>

Nanomark Therapeutics- Final Round Presentation

<http://www.youtube.com/watch?v=M4wGwIxx4Og>

U of L Fall 2010 Magazine Cover Page article

<http://www.youtube.com/watch?v=M4wGwIxx4Og>

Vogt award winners 2010

http://www.vogtawards.com/vogt_winners/vogt_winners.htm

2010 Global Moot Corp Competition Award Winners

<http://www.mootcorp.org/Winners2010.asp>