Curriculum Vitae

**Sabina Kupershmidt, Ph.D.**

University of South Dakota

Associate Professor, IHEC chair

ECHO coordinator

School of Health Sciences

**Education**

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| --- | --- | --- | --- |
| **Institution** | **Area of Specialization** | **Degree** | **Year Completed** |
| Middle Tennessee State University, Murfreesboro, TN; | Major: Biology  Minor: Chemistry | B.S. (cum laude) | 1984 |
| Vanderbilt University | Microbiology and Immunology | Ph.D. | 1990 |
| Vanderbilt University | Post-doctoral  Molecular Physiology & Biophysics | Postdoctoral  Dr. Roger Chalkley, Advisor | 1994 |
| Vanderbilt University | Clinical Pharmacology | Postdoctoral, Dr. Dan Roden, Advisor | 1996 |

**Professional Experience**

|  |  |  |
| --- | --- | --- |
| **Institution** | **Position/Title** | **Dates** |
| USD SHS  USD School of Health Sciences (SHS) | Associate Professor  Interim Director, PhD in Health Sciences Program | May 2022 - present  June 2020 – June 2021 |
| USD SHS | Chair Interprofessional Health and Education Center (IHEC), | October 2018 - present |
| USD Nursing | Assistant Professor Nursing and School of Health Sciences | Nov 16, 2015 – present |
| Sage Project Consultants, LLC. Sioux Falls, SD | Owner & Partner | April 1, 2014 – April 2015, |
| South Dakota State University, Brookings, SD | Grant Proposal Specialist, Office of Research and Sponsored Programs | Jan 7 2013 – Mar 2014 |
| Department of Anesthesiology and Pharmacology, VUMC | Research Associate Professor | Feb. 2007- Dec 2012 |
| Department of Anesthesiology and Pharmacology, VUMC; | Assistant Professor | Aug. 2002–Feb. 2007 |
| Department of Pharmacology, Vanderbilt University School of Medicine (VUMC) | Assistant Professor | 1998-2002 |
| Vanderbilt University School of Medicine | Research Instructor, Department of Pharmacology; | 1996-1998 |

**I. Special Honors and Awards**

2022-2023 Fellow, Presidential Executive Leadership Institute, USD

May 2018 USD Nursing Excellence in Research & Scholarship Award

**1. B. Grant Awards** (as PI)

* SHS Seed Grant -as PI with Angela Visser, PhD Candidate

Community Health Workers in Rural Palliative Care.

Status: funded Dec 2023

Total cost: $2,300

* Bush Foundation

*Advance Care Planning Sparks Quality Conversations about Palliative Care ECHO*;

status: funded

funding period: Sept 1, 2020 – Jan. 2023

total cost: $208,500. Submitted: Mar 6, 2020;

* South Dakota Community Foundation;

*Expanding Advance Care Planning into Palliative Care Conversations;*

total cost: $5,000;

submitted: 9/30/2019;

Funding period: 1/2/2020 – 12/31/2020;

Status: funded;

* Bush Foundation Community Innovation Grant;

*Lighting a SPARK**(****S****erving Underserved* ***P****opulations through* ***A****dvance Care Planning,* ***R****espect and* ***K****nowledge****) in South Dakota;***

Total cost: $160,000;

Funding period: Oct 2017 – Oct 2019;

Status: expired;

submitted 5/26/2017

* South Dakota Community Foundation, Community Innovations grant (application # 16-01-014B). *Advance Care Planning in South Dakota: Engaging Interprofessional Teams to Implement Quality Conversations;*

Status: expired (July 1, 2016 – Oct. 31, 2017);

total cost: $10,000

* NIH RO3 MH084820-01; Identification of compounds that protect HERG from block by proarrhythmic agents (8/21/2008-7/31/2009) , total cost $24,997;
* NIH 1RO1 HL090790-04; Modulators of HERG function and pharmacology (07/01/2008-06/30/2012); Total cost, 1.9 million;
* NIH RO1 HL069914-05 Defective Trafficking Mechanisms in a Cardiac K+ Channel (4/1/2002- 3/31/2007). Total cost, $ 1.1 million.
* American Heart Association, Grant**-**in-Aid Greater Southeast Affiliate (7/1/2004 –6/30/2006) award id: 0455297B “Transcriptional Regulation of the KCNE gene cluster in transgenic mice with dual fluorescent labels”. ($154,000 total award)
* American Heart Association, Scientist Development Grant, National Center (1/1/1998- 6/30/2002); award id: 9730133N “Investigation into the molecular interactions of the protein subunits of the cardiac delayed rectifier IKs” ($260,000 total award)
* Juvenile Diabetes Foundation International Postdoctoral Fellowship Award, 1993-1995; (this reward was returned in 1994 because I switched research fields)

**Submitted/not funded**

* Beyond Idea Grant (BIG) SDCF. Community Wellness for Immigrants.

Role: Lead Investigator

Status: submitted

Submission Date: 8/14/2023

Budget requested: $100,000

Funding period: Nov 1, 2023 – May 31, 2025

* Eugene Washington PCORI Engagement Award: Stakeholder Convening Support

*Identification of Health and Wellness Concerns among Immigrants according to PCOR/CER Principles*

Role: Lead Investigator

Submission date: Jan 11, 2023

Status: not funded

Budget requested: $100,000

Funding period: Nov 1, 2023 – Oct 31, 2024

* Eugene Washington PCORI Engagement Award: Stakeholder Convening Support

Identification of Health and Wellness Concerns among Immigrants according to PCOR/CER Principles

Status: Letter of Intent, full application invited

Submitted: 9/29/2022

* HRSA 22-141

*Transforming Pediatrics for Early Childhood*

Role: Co-Investigator (PI, Carrie Sanderson)

Submission date: May 23, 2022

Status: not funded

Budget requested: USD 4 Million

Funding Period: Sept 22, 2022 – 9/29/2026

* HRSA

*Fostering a Resilient Workforce*

Status: unfunded

Submission date: Sept 21, 2021

Budget requested: $2,256,106.00

* USD Women in Philanthropy

*Using Integrative and Holistic Modalities to Reduce Stress and Anxiety in College Students*

Status: not funded

Submission date: 4/30/2021

Proposed start date: July 1, 2021

Budget requested: $ 48,554

* Hillman Foundation Jan 1, 2020- Dec 31, 2022

*Advance Care Planning Sparks Conversations about Palliative Care ECHO*. Invited submission, selected eight out of 140 total applications.

Status: not funded

Budget: $591,519

Submitted: June 3, 2019

Status: not funded Nov. 2019

* HRSA-18-012 Kupershmidt & Samra, co-PI (7/1/2018 -6/30/2022)

Nurse Education, Practice, Quality and Retention (NEPQR)- Registered Nurses in Primary Care (RNPC) Training Program. *Nursing Undergraduates and Community Partners together enhance Public Health through IMPACT (Interprofessional Motivational Practices Applied in Community Trials)*

**Total funding:** $1,207,901 requested

The program will bring nursing undergraduate students together with mentors from the fields of substance abuse and mental health and with clients to provide meaningful opportunities for learning practical skills from each other. The purpose of this project is two-fold: 1- to enrich undergraduate nursing education using experiential learning in community health care settings, and 2 - to improve client progress in therapy to impact public health.

Status: not funded

* NIH R21 (**Kupershmidt** co-investigator with **Pallav Deka, PI**) (7/1/2018-6/30/2020)

*Move on Virtual Engagement – Healthy Kids (MOVE-HK): An internet-based face-to-face peer social support intervention to improve health behavior in children and adolescents.*

Annual funding: ($175,000 total direct costs)

Real-time feedback on performance of physical activity and social relationships with peers can have a significant influence on health behavior. This research will determine if a virtual platform can be created over the Internet for children to interact and influence each other to make healthy behavior changes.

Status: not funded

* South Dakota Board of Regents Competitive Research Grant Program, Track II, FY2019

Undergraduate Research Opportunities (UGRO) in Nursing (**Kupershmidt,** PI)

Funding period: Aug 22, 2018 – Aug 21, 2019

Funding amount: $25,000

Status: not funded

**Completed as a co- investigator**

* **5P01 HL46681** (Program Director - Roden) NIH/NHLBI. Biology of Arrhythmia Susceptibility (08/01/92-07/31/07)
* **2R01 HL49989** (Project Director - Roden) NIH/NHLBI Modulation of Cardiac Repolarization (08/01/91 - 07/31/06)

**Awards**

**II. Teaching and Advising**

**II. A. Courses Taught**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Courses taught in the PhD in HSC program** | | | | |
| **Course number** | **Title** | **Number of students** | **credits** | **Semester** | **notes** |
| HSC-591-U930 | Independent study | 1 | 1 | 2017 Fall | Developed the content for this course; |
| HSC-591-U930, | Independent study | 1 | 1 | 2018 Spring | Developed the content for this course. |
| HSC-890-U821T | Seminar 3 | 5 | 1 | 2019 Spring | With Dr. Haifa Samra; |
| HSC-898D | Dissertation | 1  1  1 | 6  6  3 | 2019 Fall  2020 Spring  2020 Summer |  |
| HSC-791-UM1 | Grant writing and grantmanship | 2 | 2 | 2020 Fall | Developed new content for this course |
| HSC-791-UM2 | Seminar 1 &2  PhD and Scholarly Forum | 1 | 1 | 2020 Fall | Developed new content for this course |
| HSC890 | Seminar 3  PhD and Scholarly Forum | 9 | 1 | 2020, 2021, 2022, 2023 Spring | Developed new content for this course |
| HSC703 | Grantwriting and grantsmanship | 12 | 3 | 2021, 2022 Summer | Developed new content for this course |
| HSC 450 | Patient Safety – Quality Improvement | 30 | 3 | 2023 Spring  2022 Fall | Developed new content for part 2 of this course. |
| HSC 111 | Introduction to Research | 15 | 3 | 2023 Fall | Developed new content for this course |

**II. B. Grants or applications to support teaching or advising**

* Health Affairs Medical Informatics Committee (HAMIC), technology request.

*The LifePak-20 Defibrillator for High Fidelity Simulations in Nursing Education.*

Total cost: $1,795.

Submitted: 10/30/2019;

status: funded;

* Josiah Macy Jr. Foundation

*A Clinical Toolkit for Placing Interprofessional Student Teams in the Clinical Learning Environment.*

Status: funded

Awardee: Grand Valley State University – Office of the Vice Provost for Health; USD subcontractor

period: June 2020- April 2021

total cost: $2,000 for USD IHEC

* Nursing Faculty Small Grant Program,

*Enrichment of research education and clinical practice for undergraduate nursing students through meaningful research;*

Total cost: $3,747.87;

(cross-listed in section I)

**II.C. Graduate Student Mentoring**

**Ph.D. thesis committees**

Ph.D. Dissertation committee member Lauren Manderfield, Interdisciplinary Graduate Program, Dept. Pharmacology Vanderbilt University, 2008;

Ph.D. Dissertation committee member John Lowe, Dept. of Pathology, Interdisciplinary Graduate Program, Vanderbilt University, 2008;

Ph.D. Dissertation advisor to Traci Barnable, MSN, RN, candidate Ph.D. HSC program (June 2017 – Aug. 2020);

Ph.D. Dissertation committee member Whitney Lucas-Molitor, Ph.D. HSC program (Aug. 2019 – 2020)

Ph.D. Dissertation committee member Katie Wagner, Ph.D. HSC program (2018 – 2021);

Ph.D. Dissertation committee chair Angela Kroeze Visser, Ph.D. HSC program (2020-present);

Ph.D. Dissertation committee chair Charles Dolan, PhD. HSC Program (2021 – present);

Ph.D. Dissertation committee member, Kendal Beazer, PhD. HSC Program (2020 – present);

**MPH Capstone**

Capstone Advisor, Anthony G. Brandner, Joint USD and SDSU Master of Public Health Program, PUBH 730: Integrative Learning Experience (April 2021 – Aug. 2021); *Bi-Directional Communication Training through Simulation between Public Health Professionals and Acute Care Medicine Providers during a Health Crisis Event.*

**Undergraduate Directed Student Learning**

Delight Chizoba Obiozor, (May 2017 – May 2018), USD Pathway to Innovation, mentored undergraduate Research Internship;

Matthew Springer, USD Pathway to Innovation (May 2018 – 2019), mentored undergraduate Research Internship. Recipient of the CURCS mini-grant. Travel Award $750; *Immigrants and Refugees in South Dakota: A Health Needs Assessment, 2019.*

Amanda Gravholt, BSN Honors Studies, USD Nursing. (Dec. 2019 – May 2021). Mentor honors studies. Effects of a Slow-Deep Breathing Protocol on Lowering Blood Pressure: A Rapid Review

George Nimely, Biological Sciences undergraduate student (May 2022- present). UDiscover awardee; $5,000 award to student, role: mentor. Promoting Quality Conversations about Advance Care Planning in South Dakota through the Respecting Choices Model

**II. D. Non-classroom teaching or invited lectures** (regional, national and international)

1. “Do ion channels have partners before reaching maturity at the plasma membrane?” April 17, 2000. University of Pittsburgh, Dept. Pharmacology.

2. “Do ion channel proteins have partners before reaching maturity at the plasma membrane?” July 2000. Universitaire Instelling Antwerpen, Antwerp, Belgium.

3. “Functional domains in the HERG C-terminus.” Merck Research Laboratories, West Point, PA. August 2000.

4. “Antivirals and Antifungals”. Meharry Medical School, Nashville, TN. April 2001.

5. “The cardiac phenotype of the minK(-/-)/lacZ(+/+) mouse”. *K+ channel transgenesis in the mouse heart* meeting at Abbaye Royaumont, Paris, France. June 1, 2001.

6. “Molecular Control Mechanisms Affecting the Cardiac Delayed Rectifier K+ current.” Program in Molecular Medicine, University of San Diego, San Diego, CA. July 19, 2002.

7. “C-terminal signals regulating the membrane trafficking of the HERG K+ channel.” UAB Physiology and Biophysics Scientific Retreat and GAT Conference, Birmingham, AL, October 18, 2002.

8. “What targeted deletion of K+ channel  subunits has taught us” Cardiovascular Seminar. Scientific Sessions of the AHA, Nov. 2002. Chicago, IL.

9. “Functional Domains within the C-terminus of HERG K+ channel subunits”. NYU School of Medicine, Pediatric Cardiology Molecular and Cellular Research Laboratories Seminar Series. May 15, 2003.

10. “Modulators of HERG channels”. Internal Medicine Cardiovascular Division, University of Iowa, Cedar Rapids, IA. March 1, 2007.

11. “Modulators of the HERG K+ channel in the heart.” Lake Cumberland Biological Transport Meeting. Lake Cumberland State Park, KY. June 22, 2009.

12. “The Cardiac Sodium Channel, a Target For Lipid Peroxidation During Ischemia?” Lake Cumberland Biological Transport Meeting. Lake Cumberland State Park, KY. June 21, 2010.

13. “Modulators of the HERG K+ channel”. NIH CSR, Bethesda, MD. Aug 17, 2010

14. “Modulators of the HERG channel in the heart”. Sept. 14, 2010. Mannheim, Germany. University Clinic, Department of Cardiology.

15. “Identification and Biophysical Characterization of a Compound that Protects HERG from Block by A Proarrhythmic Agent.” Invited lecture at the *Biannual Meeting of the Swiss Society for Pharmacology and Toxicology*. Zürich, Switzerland. April 28, 2011.

16. “Identification and Biophysical Characterization of a Compound that Protects HERG from Block by A Proarrhythmic Agent.” Invited lecture at the *Aurora Biomed* Ion Channel Retreat, Vancouver, Canada. June 27-29, 2011.

17. “Novel Approaches to Risk Reduction in LQT Syndrome Arrhythmias". Sanford Health/USD, Sioux Falls, SD. April 19, 2012.

18. “Novel Approaches to Risk Reduction in LQT Syndrome Arrhythmias". South Dakota State University, Brookings, SD. May 23, 2012.

19. “Novel Approaches to Therapy for hERG-Related Arrhythmias”. Lake Cumberland Biological Transport Group meeting, Lake Cumberland State Park, KY. June 12, 2012.

20. Administrative Aspects of Grant-writing. As part of GSR 601. SDSU, Brookings, Sept. 26, 2013

21. NIH Funding Applications. Graduate Student orientation. SDSU, Brookings. Feb. 6, 2014.

22. “Funding your ideas and projects through grants.” New Faculty Orientation Workshop. SDSU, Brookings, SD. Oct. 1, 2013. SDSU.

23. “Funding your ideas and projects through grants.” Sioux Falls Area Chamber of Commerce. July 23, 2014. Chamber Café.

24. South Dakota Summit on Interprofessional Education. Courageous Conversations – Courageous Decisions. August 15, 2017. Invited presentation.

25. Assessing the Effects of Interprofessional Teams on Advance Care Planning. 2017 Sanford Nursing Research and EBP Conference. Sioux Falls, SD. October 6, 2017. Invited presentation.

26. Nurse Educators Create Community Partnerships to Promote Statewide Advance Care Planning. Avera McKennan Hospital & University Health Center Nursing EBP/Research Conference. Keynote address. Nov. 9, 2018

27. ASAHP regional summit at IHEC USD. 2022. Conference Organizer. Collaborative Stakeholder Forum Connecting Academic Programs and Clinical Practice Together to Inform System Improvement. ASAHP – IHEC. Regional & National. June 3, 2022, Sioux Falls, SD and other locations.

**II.E. Advising/Other**

**Past and present Trainees**

Christina Speirs, VUMC MSTP Program; Lab rotation 01/01/2003 - 04/30/2003

Kenshi Hayashi, M.D., Ph.D., post-doctoral trainee, Oct. 2002-Oct. 2004. Currently holds a faculty position in Cardiology at Kanazawa University, Japan.

### Tadashi Nakajima, M.D., Post-doctoral fellow, 2004-2005. Currently holds a faculty position at Gunma University Hospital in Japan.

### Britney Grayson, VUMC MSTP Program; Lab rotation 05/10/2005 - 06/10/2005;

Sonya Dave, VUMC IGP Program; Lab rotation March 2006 – May 2006;

Amanda Lorinc, M.D. BH Robbins Scholar and Resident, VUMC Department of Anesthesiology Oct. 2010 – Oct 2011

**II.F. Development of teaching strategies, assessments, methods**

* Introduction to Research (HSC111). 2023.

Design & teach new course. Course description: *This course familiarizes students with the basic research knowledge, skills, and abilities required to design and implement a research project.*

**Rationale** Introduction to Research is a 3-credit course designed to provide students with a foundational understanding of research principles, methods, and techniques. This course aims to familiarize students with the fundamental knowledge, skills, and abilities required to design and implement a research project successfully. Students will explore various research methodologies, ethical considerations, data collection techniques, and data analysis approaches.

HSC 111 is a requirement for completion of the Research Coordinator Certificate. The Research Coordinator Certificate is 12-credit undergraduate certificate that would meet all six of the knowledge criteria to prepare the learner to work as a Clinical Research Coordinator (CRC) or Clinical Research Associate (CRA). After completing a number of hours of professional experience, the learner would be eligible to sit for the CCRC or CCRA exam through the Association of Clinical Research Professionals (ACRP; <https://acrpnet.org/>).

* HSC 450 Patient Safety and Quality Improvement. 2022.

Design and teach new course modules. Course Description: *Adverse clinical events occur within health care systems causing physical and psychological harm to patients, their families and staff. This course provides the opportunity to develop skills in quality improvement, patient safety, teamwork, leadership, and patient-centered care. These are essential skills needed by all healthcare professionals.* Part Two of the course will satisfy one of four required components (HSC 111, HSC 450, HSC 498 parts 1& part 2) leading up to the Clinical Research Coordinator (CRC) certificate. The CRC certificate is intended to meet the objectives for the Certified Clinical Research Coordinator or Certified Clinical Research Associate (CCRC/CCRA) exam administered by the Academy of Clinical Research Professionals (ACRP).In addition to learners in a traditional undergraduate program, this certificate may also benefit individuals currently in the workforce who want to increase their job skills and marketability in their healthcare field.

* Ph.D. in Health Sciences program HSC-591 (2017)

This is an advanced course in clinical research where students will complete individual clinical research projects. It is intended for students with the ability to think independently, be self-directed and take initiative based on informed choices. Students will develop, direct and complete a clinical research project based on their current practice and related to any aspect of patient/client management, practice management, or professional practice. Students will be mentored by a faculty research advisor who is assigned based on content area. Students will be exposed to various aspects of research, including analytical, ethical and environmental. Students are expected to achieve outcomes in the academic and administrative arenas as well as with the larger community. Significant portions of the course will be student-driven through independent research design.

* HSC-791 Independent Studies Ph.D in Health Sciences program (2020)

Includes directed study, problems, readings, directed readings, special problems and special projects. Students complete individualized plans of study which include significant one-on-one student-teacher involvement. The faculty member and students negotiate the details of the study plans. Enrollment will be limited. Meetings depending upon the requirements of the topic.

* HSC-703 Grant Writing and Grantmanship (2020)

Rationale: Design and teach new course to expand options provided through CPHD 703 beyond NIH grant applications. This course will provide an understanding of how to assemble a grant proposal of choice for either a private or federal funding agency. In the process, the student will develop and articulate a focus area of their planned research through participation in discussions with the instructor and/or other invited guests. This will include application of research conceptualization, methods, and synthesis of knowledge of course work and experiences.

* Development and implementation of the IHEC Student IPE Champion passport system to track and validate IPE competencies of students participating in IPE events at USD SHS.
* National Clarion Competition 2022 (University of Minnesota). Organized team participation of an interprofessional group of 4 students from USD SHS 2022

**III. Research and Creative Activity**

**III. A. Peer Reviewed Publications**

1. DeMarchi JM, Lu Z, Rall GF, **Kupershmidt S**, Ben-Porat T: Structural organization of the termini of the L and S components of the genome of Pseudorabies Virus. J Virol 1990; 64: 4968-4977.

2. Reilly LM, Rall G, Lomniczi B, Mettenleiter TC, **Kupershmidt S**, Ben-Porat T: The ability of Pseudorabies Virus to grow in different hosts is affected by the duplication and translocation of sequences from the left end of the genome to the UL-US junction. J Virol 1991;65: 5839-5847.

3. **Kupershmidt S**, DeMarchi JM, Lu Z, Ben-Porat T: Analysis of an origin of DNA replication located at the L terminus of the genome of Pseudorabies Virus. J Virol. 1991;65: 6283-6291.

4. Rall GF, **Kupershmidt S**, Lu Z, Mettenleiter TC, Ben-Porat T: Low-level inversion of the L component of Pseudorabies Virus is not dependent on sequence homology. J Virol. 1991; 65:7016-1019.

5. Rall GF, **Kupershmidt S**, Sugg N, Veach RA, Ben-Porat T: Functions of the sequences at the ends of the inverted repeats of Pseudorabies Virus. J Virol 1992;66: 1506-1519.

6. **Kupershmidt S**, Rall GF, Lu Z, Ben-Porat T: Cleavage of concatemeric DNA at the internal junction of "translocation" mutants of Pseudorabies Virus and inversion of the L component appear to be linked. Virol 1992;187: 223-232.

7. Yang T, **Kupershmidt S**, Roden DM: Anti-*minK* antisense decreases the amplitude of the rapidly activating cardiac delayed rectifier K+ current. Circ Res 1995; 77: 1246-1253.

8. **Kupershmidt S**, Yang T, Roden DM: Modulation of cardiac Na+ current phenotype by 1-subunit expression. Circ Res. 1998; 83:441-447.

9. **Kupershmidt S**, Snyders DJ, Raes A, Roden DM: A K+ channel splice variant common in human heart lacks a C-terminal domain required for expression of rapidly activating delayed rectifier current. J. Biol. Chem. 1998;273:27231‑27235.

10. **Kupershmidt S**, Yang T, Anderson ME, Wessels A, Niswender K, Magnuson MA, Roden DM: Replacement by homologous recombination of the *minK* gene with *lacZ* reveals restriction of *minK* expression to the mouse cardiac conduction system. Circ Res. 1999;84:146‑152.

11. Roden DM, **Kupershmidt S**: From genes to channels: normal mechanisms. Cardiovasc Res, 1999; 42:318-326.

12. Demolombe S, Franco D, de Boer P, **Kupershmidt S**, Roden D, Pradal G, Jarry A, Moorman A, Escande D: Differential Expression of KvLQT1 and its Regulator IsK in Mouse Epithelia. Am. Jrl. Phys.Cell Phys.2001; 280:C359-C372.

13. Nicolas M-T , Dememes D, Martin A., **Kupershmidt S**., and Barhanin J. 2001; IKs Potassium Channels in Mammalian Vestibular Dark Cells. Hear. Res. 2001; 153:132-145.

14. Franco D, Demolombe S, **Kupershmidt S**, Dumaine R, Dominguez JN, Roden D, Escande D, Moorman AFM. Divergent expression of delayed K+ channel subunits during mouse heart development. Cardiovasc. Res. 2001; 52:65-75.

15. Tan HL, **Kupershmidt S**, Zhang R, Stepanovic S, Roden DM, Wilde AAM, Anderson ME, Balser JR: A Calcium Sensor in the Sodium Channel Modulates Cardiac Excitability. 2002; Nature 414:442-447.

1. **Kupershmidt S**, Yang T, Chanthaphaychith S, Wang Z, Towbin JA, Roden DM. Defective HERG trafficking linked to an ER retention signal in the C-terminus. 2002. J. Biol. Chem. 277: 27442-27448.

17. **Kupershmidt S**, Yang I. C.-H., Sutherland M, Wells SK, Yang T, Yang P, Balser JR, Roden DM: The Cardiac-Enriched LIM domain protein fhl2 is required to generate IKs in a heterologous system. 2002. Cardiovasc Res 56(1):93.

1. Kondo RP, Anderson RH, **Kupershmidt S**, Roden DM, Evans SM: Development of the Cardiac Conduction System as Delineated by minK-LacZ. 2003. Jrl. Cardiovasc. Electrophysiol. 14:383-391
2. Arad M, Moskowitz IP, Patel VV, Ahmad F, Perez-Atayde AR, Sawyer DB, Walter M, Li GH, Burgon PG, Maguire CT, Stapleton D, Schmitt JP, Guo XX, Pizard A, **Kupershmidt S**, Roden DM, Berul CI, Seidman CE, Seidman JG. A Murine Model of Human PRKAG2 Cardiomyopathy Demonstrates Glycogen Storage and Anomalous Atrio-ventricular Connections. 2003. Circulation, 107:2850-2856.
3. **Kupershmidt S**, Yang ICH, Hayashi K, Wei J, Chanthaphaychith S, Petersen CI, Johns DC, George AL, Roden DM, Balser JR. IKr drug response is modulated by KCR1 in transfected cardiac and noncardiac cell lines. 2003. FASEB Jrl. 17:2263-2265
4. Yang P, **Kupershmidt S**, Roden DM. Cloning and initial characterization of the of the human cardiac sodium channel (SCN5A) promoter. 2004. Cardiovasc Res. 61(1):56-65.
5. Gutman GA, Chandy KG, Adelman JP, Aiyar J, Bayliss DA, Clapham DE, Covarriubias M, Desir GV, Furuichi K, Ganetzky B, Garcia ML, Grissmer S, Jan LY, Karschin A, Kim D, **Kuperschmidt S**, Kurachi Y, Lazdunski M, Lesage F, Lester HA, McKinnon D, Nichols CG, O'Kelly I, Robbins J, Robertson GA, Rudy B, Sanguinetti M, Seino S, Stuehmer W, Tamkun MM, Vandenberg CA, Wei A, Wulff H, Wymore RS.International Union of Pharmacology. XLI. Compendium of Voltage-Gated Ion Channels: Potassium Channels. 2003. Pharmacol Rev. 55(4):583-6.
6. Jay PY, Harris BS, Maguire CT, Buerger A, Wakimoto H, Tanaka M, **Kupershmidt S**, Roden DM, Schultheiss TM, O’Brien TX, Gourdie, RG, Berul CI, Izumo S. Nkx2-5 Mutation Causes Anatomic Hypoplasia of the Cardiac conduction System. 2004. Jrl. Clin. Invest. 113(8). 1130-37.
7. Kanki H, **Kupershmidt S**, Yang T, Wells S, and Roden DM. 2003. A structural determinant of KCNQ1 misprocessing in Long QT Syndrome mutations. 2004. J Biol. Chem.; 279(32):33976-83. Epub 2004 May 12.
8. Moskowitz IP, Pizaard A, Patel VV, Bruneau BG, Kim JB **Kupershmidt S**, Roden D Berul CI Seidman CE Seidman JG. The T-Box transcription factor Tbx5 is required for the patterning and maturation of the murine cardiac conduction system. Development. 2004. 131(16):4107-16
9. Khoo MSC, Kannankeril PJ, Li J, Zhang R, **Kupershmidt S**, Zhang W, Atkinson JB, Colbran RJ, Roden DM, Anderson ME. Calmodulin Kinase II activity is required for normal atrioventricular nodal conduction. 2005. Heart Rhythm, 2:634-640.
10. Temple J., Frias P., Rottman J., Yang T., Wu Y., Verheijck E.E., Zhang W., Chanthaphaychith S., Kanki H., Atkinson J.B., King P., Anderson M.E., **Kupershmidt S.,** Roden D.M. Atrial Fibrillation in KCNE1 null mice. 2005. Circ Res. 97:62-69
11. Zhai P., Yamamoto M., Galeotti J, Liu J., Maurekar M., Thaisz J., Irie K., Holle E., Yu X., **Kupershmidt S**., Roden D.M., Wagner T., Yatani A., Vatner D.E., Vatner S.F., Sadoshima J. Cardiac-specific Overexpression of AT1 Receptor Mutant Lacking Gq/Gi Coupling Causes Hypertrophy and Bradycardia in Transgenic Mice. 2005. J. Clin Invest. 115: 3045-3056.
12. Fukuda K., Davies S.S., Nakajima T, Ong B-H, **Kupershmidt S**, Fessel J, Amarnath V, Anderson ME, Boyden PA, Viswanathan PC, Roberts II LJ, Balser JR. Oxidative Mediated Lipid Peroxidation Evokes Proarrhythmic Effects on Cardiac Sodium Channels. 2005. Circ. Res. 97:1262-1269.
13. Zhang M., Houamed K, **Kupershmidt S**, Roden D., Satin LS. Pharmacological Properties and Functional Role of Kslow current in mouse pancreatic -cells: SK channels contribute to Kslow tail current and modulate insulin secretion. 2005. J. Gen. Physiol. 126: 353-63.

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**III. B. Bookchapters**

**Kupershmidt S.**, Kelemen K., Nakajima T. In C.C. Liew and V. Dzau (eds.) *Cardiovascular Genetics and Genomics for Cardiologists,* 2007. Blackwell Publishing. The Long QT Syndrome. Chapter 5.

**III. C. Podium Presentations and Abstracts**

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42**. Kupershmidt S,** Hegge H. Advance Care Planning in South Dakota: Engaging Interprofessional Teams to Implement Quality Conversations. Midwest Interprofessional Practice, Education and Research Center (MIPERC). Grand Rapids, MI. Podium Presentation, Sept. 23, 2016.

1. **Kupershmidt S**, Fischbach C, Hegge H, Bloom K, Samra HA. Advance Care Planning in South Dakota: An Interprofessional Team Effort. Midwest Nursing Research Society (MNRS). Minneapolis, MN. Poster presentation. April 2017.
2. **Kupershmidt S**, Samra HA, Sudhagoni RG, Fuller MD, Pickthorn ST. Evaluating the Efficacy of Manual vs LUCAS-2 cardiopulmonary resuscitation during Out-of-Hospital Cardiac Arrest in South Dakota. Midwest Nursing Research Society (MNRS). Minneapolis, MN. Podium presentation. April 2017.
3. **Kupershmidt, S.** Training Undergraduates in Health Sciences as Interprofessional Advance Care Facilitators. Midwest Interprofessional Practice, Education and Research Center (MIPERC). Grand Rapids, MI. Poster Presentation, Sept. 2017
4. **Kupershmidt, S.** 2018. Definition of a Protocol Based on Yoga Breathing to Improve Lung Function. poster, MNRS Cleveland April 14th, 2018.
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7. Johnson N, Waldner, D, O’Bryan B, Tesch, C., Barnable T., **Kupershmidt, S.,** 2018. Yoga Breathing Lowers Blood Pressure. Poster, SHS Research Day, USD Vermillion, SD April 6, 2018.
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10. Springer, M., Obiozor, D., **Kupershmidt, S.** (March 27-30, 2019). Immigrants and Refugees in South Dakota: A Health Needs Assessment. [Poster]. MNRS, Kansas City, KA,
11. **Kupershmidt, S.**, Williams M. Cleveland T., Lucas-Molitor W. (Aug. 2020). Interprofessional teams of students create a strategy for coronavirus mitigation by remote conferencing. [Professional poster]. Nexus Annual Summit, 2020. <https://summit2020.nexusipe.org/>
12. Lucas-Molitor, W., Naber, A., Cleveland, T.L., Regnerus, C., **Kupershmidt**, S., Zimney, K., Wesner, C. (Aug. 2020). **Designing and Implementing Interprofessional Education Experiences Responsive to Critical Healthcare Issues.** [presentation]. Nexus Annual Summit. <https://summit2020.nexusipe.org/>
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14. Nimely G, Kupershmidt S, Fischbach C, Hegge H, Pithan A. 2022. Promoting Quality Conversations about Advance Care Planning in South Dakota through the Respecting Choices Model. [Poster]. Southeastern South Dakota Research Symposium June 15, 2022.

57. Amber Boyd, PT, DPT, DHSc1; Sabina Kupershmidt, PhD2; Elizabeth Swann PhD, ATC, FNAP3; Genevieve Pinto Zipp PT, EdD, FNAP4; Anthony P. Breitbach PhD, ATC, FASAHP, FNAP5 ASAHP regional summit – engaging academia with healthcare industry partners to enhance health professions education and improve health outcomes. 2022. ASAHP Annual Conference, Long Beach, CA Oct. 2022. [Podium presentation]. *Journal of Allied Health*. 2023;52(1):53-54. Accessed April 14, 2023. https://search-ebscohost-com.usd.idm.oclc.org/login.aspx?direct=true&db=ccm&AN=162887962&site=ehost-live&scope=site

58. Puumala. S. A Remote Disaster Simulation: Exploring the Intersection between Public and Clinical Health. Teaching Prevention 2023, Leadership for Health Equity. New Orleans, LA from March 27-29, 2023.  Podium Presentation.

59. Nimely, G. & Kupershmidt, S. April 2023. Promoting Quality Conversations about Advance Care Planning in South Dakota through the Respecting Choices Model. USD, Idea Fest, poster presentation.  
60. Kupershmidt, S. 2023. Supporting a Statewide Network of Palliative Care Telementoring Using the ECHO model. 7th Annual Eastern South Dakota Research Symposium. Sanford Center, Sioux Falls. June 14, 2023. Poster presentation.

**III. D. Grants** (see Section IA)

**III. E. Other Activities**

**Media Contributions**

Param, Mrnal (2021). *An Introduction to Slow Deep Breathing.* You Tube video. Available at: <https://youtu.be/3r966hqiD_A>

Kupershmidt, S., Advance Care Planning, South Dakota. Advance Care Planning: Quality Conversations. Website. Retrieved from: <http://www.advancedcareplanningsd.com/>

Kupershmidt, S., Interprofessional Student Training Workshop, 2018 at the University of South Dakota. MIPERC newsletter, volume 5. Dec. 2018. Retrieved from: <https://t.e2ma.net/message/gv8mx/0mz1q5>

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Kupershmidt, S. 2022. YouTube video. IPE at USD and IHEC. Explaining interprofessional education (IPE) and learning. Jan 2022. Retrieved from <https://youtu.be/g_kp9ClQfbs>

Kupershmidt, S. 2022. YouTube video. UDiscover at USD. Retrieved from https://[www.youtube.com/](http://www.youtube.com/) watch?v=xQv1DrQz3bw

**IV. Service and Engagement**

**IV. A. Administrative Appointments & Service - internal**

* Chair of IHEC; Sept. 2018 – present; duties include
  + Planning and organization of monthly IHEC meetings and reporting;
  + to organize and coordinate campus-wide IPE and practice activities that include students and faculty;
  + providing direction for scholarship products intended for dissemination or grant funding by Nursing and SHS faculty;
* Interim Director PhD in Health Sciences Program; June 2020 – June 2021; duties include
  + Plan and organize PhD in Health Sciences steering committee
  + Student admissions, supervision;
  + Interface with students and administration;
  + Interface with advisors; identify, engage, inform advisors;
  + Interface with Graduate School Dean office
  + Tracking of student progress;
  + Transfer credits validation and approval;
  + Update handbook;
  + Course planning, evaluation;
* CURCS (Council for Undergraduate Research and Creative Scholarship) committee (Aug 2021 – Aug 2024)
  + Chair of U-Discover program (Aug 2021 – Aug 2023)
* Chair Nursing Research & Scholarship committee (2018-2020)
* SHS Research and Scholarship committee (2019 – present)
* University Senate, Faculty Affairs Committee (May 2022 – present)
* Undergraduate Research Excellence Award Committee (October 2022- present)
* Organizer for regional ASAHP summit at USD-Sioux Falls (June 2022)

**IV.B. External Service**

* **Association for Doctoral Programs in Health Sciences (ADPHS)** Program Review Committee, Vice-chair (elected); the ADPHS is a national organization of 30 accredited institutions of higher education. I am working as a member of the Program Review sub-committee. The program review committee has developed peer review criteria, a training manual, a manual for applicants and has obtained LLC status. Membership in this organization will give the USD SHS a voice in defining quality programming at a national level.
* **Association of Schools of Allied Health Professions (ASAHP)**, member Interprofessional Taskforce Scholarship committee, 2021 – present; Organization of regional summits April – June 2022.
* **Avera Nursing Research Committee**, member; April 2018 – 2020; my functions on this committee include:
  + Review research proposals submitted by students;
  + Review research policies;
  + Annual Avera Nursing EBP conference planning;
  + Interface between USD Nursing and local practice partner (Avera);
* **Sanford Research Council**, member; Sept 2016-2020;
  + - Review research proposals submitted by students;
    - Annual EBP conference planning;
    - Interface between USD Nursing and local practice partner;
* Midwest Interprofessional Practice, Education and Research Center (MIPERC) Advisory Council member; October 2016 – 2021;
  + - Participate in quarterly meetings;
    - Annual conference planning;
    - Report on local activities;
* Chair-elect of the Translational Science Research Interest Group/MNRS, April 2018- Jan. 2019;
* Chair of Research Assistant II search committee, 2017, USD Nursing
* Rank reassignment committee, member, Cheryl Fischbach, instructor to lecturer, October 2017;
* Judge at Sanford Science Fair, June 14th, 2014. Sioux Falls, SD;
* Representative for the Biophysical Society at the Science, Engineering, and Technology Congressional Visits Day Washington, DC, April 6-7, 2011;
* Judge at the 28th Annual Research Forum April 22, 2010;
* Discovery Grants May 2007, Vanderbilt University, member review committee;
* Research Strategic Planning Committee, Vanderbilt University, Dept. of Anesthesiology, 2009;

**Extramural grant review**

* Member of the American Heart Association Cellular CV Physiology and Pharmacology Study Group 2003;
* NIH Special Emphasis Panel, Cardiovascular Sciences Small Business Activities 2004, Council ZRG1 CVS-K 10B,
* NIH Special Emphasis Panel, Cardiovascular Sciences Small Business Activities 2005, Council ZRG1 CVS-K 10B,
* Cardiovascular Sciences Small Business Activities ZRG1 CVS-K 10B, NIH 3/20/2006
* Committee R2 – Basic Cell & Molecular Biology 2; AHA Peer Review; April 2, 2008
* NIH panel, Development of Assays for High Throughput Screening; ZRG1 BST-J 52R, 7/30/2008;
* AHA Peer Review; Committee R2 – Basic Cell & Molecular Biology 2; April 15, 2009
* Special Emphasis Panel/Scientific Review Group 2009/10 ZRG1 CVRS-B, July 7, 2009.
* AHA Peer Review; April 29, 2010; Cardiac Electrophysiology BSc 2 Study Section
* AHA Peer Review; Oct. 3, 2010; Cardiac Electrophysiology BSc 2 Study Section
* AHA Peer Review; April 21, 2011, Cardiac Electrophysiology BSc 2 Study Section
* NIH Special Emphasis Panel May 19, 2011 ZRG1 CVRS-F (02)M on “Cardiac Electrophysiology”
* AHA Peer Review; Oct 13, 2011 Cardiac Electrophysiology Bsc2 study section
* AHA Peer Review; Mar 30, 2012 Cardiac Electrophysiology Bsc2 study section
* NIH Special Emphasis Panel, Small Business: Cardiovascular Sciences, Council ZRG1 CVRS-N 10B, July, 12 2012.
* NIH Special Emphasis Panel, Small Business: ZRG1-CVRS-C (10) Baltimore, MD March 5-6, 2015.

**Professional affiliations**

American Heart Association (2002-2012)

Biophysical Society (2004-2012)

Cardiac EP Society (2010-2012)

National Center for Interprofessional Practice and Education (Nov. 2015- present)

Grant Professional Association (2014 – 2016)

Midwest Nursing Research Society (2016 – present)

Midwest Interprofessional Practice, Education and Research Center (MIPERC) (October 2016- present)

American Association for the Advancement of Science (2017-present)

Omaha Women’s Leadership team (2020-present)

## Ad hoc reviewer for

Amer Jrl Physiol (to 2012)

Circulation Research (to 2012)

Circulation (to 2012)

Cardiovascular Research (to 2012)

Molecular Pharmacology ( to 2012)

Journal of Molecular and Cellular Cardiology (-2012)

Journal of Biological Chemistry (to 2012)

Journal of Cell Science (to 2012)

Western Journal of Nursing Research (2021)

Respiratory Physiology & Neurobiology (2020)

Frontiers in Drug Discovery (2021)

HIPE Health Interprofessional Practice and Education (2021, 2022)

International Journal of Yoga Therapy (2022)

**Leadership and Continuing Education Activities**

* ***Entering Mentoring.*** 2022. Center for Improvement of Mentored Experiences in Research (CIMER). Research mentor training is an evidence-based, interactive approach designed to help mentors develop skills for engaging in productive, culturally responsive, research mentoring relationships—relationships that optimize the success of both mentors and mentees. Completion of 6-week training Jan-Feb 2022.
* ***Motivational Interviewing –* *helping patients in Palliative Care.*** Oct 6, 2021, Sioux Falls, SD. In- person training (6hrs). Define MI Basics; Describe the use of the Spirit of MI when working with patients in Palliative Care; Demonstrate the Skills of MI.
* ***TeamSTEPPS Master Trainer.*** American Hospital Association. AHA Center for Health Innovation. April 19 – June 23, 2021. *Description:* The virtual course design is based on several guiding principles: 1) health care professionals need access to flexible learning options that work with busy schedules; 2) live online workshops should be focused on active learning – engaging directly with faculty and peers and learning how to apply tools and skills to a variety of situations; and 3) knowledge transfer is most effective when participants can immediately apply what they learn to their work.
* ***Non-Clinical TeamSTEPPS: Growing Your Expert Team****.* American Hospital Association. AHA Center for Health Innovation.  *Description:* the course provides an overview of how to use the TeamSTEPPS tools non-clinically while also identifying ways to teach the tools from a non-clinical perspective so everyone is included. Nov/Dec 2020. 6 contact hours online training.
* ***Project ECHO Virtual Immersion Training.*** ECHO Institute. UNM Health Sciences. Online training. Nov. 11-13, 2020.
* ***World Health Organization. Health Emergencies Programme.*** COVID-19: Operational Planning Guidelines and COVID-19 Partners Platform to support country preparedness and response. March 22, 2020. Web-based training.
* ***Introduction to Online Teaching and Learning.*** Jan. 2020. USD Center for Teaching and Learning.
* ***Innovative IPE Instructional Methods: Strategies and Lessons Learned.*** 1 contact hour. AACN
* 7 Continuing Education contact hours for participation in the MNRS 41st annual Research Conference April 6-9, 2017 Hyatt Regency Minneapolis
* Received 4 CME credits for attending the Midwest Interprofessional Education and Research Center (MIPERC) Conference, Team Science and Virtual Health Care, Sept 20 -22, 2017 Grand Rapids, MI.
* Received 3 CME credits for attending the Midwest Interprofessional Education and Research Center (MIPERC) Conference on “The Role of Interprofessional Teams in Healthcare Delivery”, Sept 21 -23, 2016 Grand Rapids, MI.
* Ambassador Training, National Center for Interprofessional Education and Collaboration, January 2016, web-based training.
* ***Respecting Choices ® ACP Facilitator Training*** certification, Mar 2016
* Completion of USD online graduate courses Health Science Administration (2013-2015):

MSAS-763 Prof Writing for Administration,

POLS-722 Budgetary & Fiscal Management,

POLS-733 Administrative Law/Government and

MSAS-764 Research in Admin Practice,

Cumulative GPA 3.75

**IV. C. University Service**

**Professional service activities**

USD Faculty Senate, Faculty Affairs Committee, member (2022 – present)

CURCS Committee, USD, chair of UDiscover

School of Health Sciences Research Committee, member (Sept 2019- present);

Intellectual Property committee, USD faculty senate subcommittee (Aug. 2018 – 2019);

Chair of the Interprofessional Health Education Center (Sept 2018- present);

Midwest Interprofessional Practice, Education and Research Center (MIPERC) Advisory Council member; October 2016 – current;

Chair of the Research and Scholarship Committee, USD Nursing May 2018-2020;

Chair of IHEC Scholarship subcommittee, May 2017 – present;

Chair of the IPE Steering Committee USD SHS June 2016- Dec 2016;