

Patrick C. Hardigan, Ph.D.

Kiran C. Patel College of Allopathic Medicine
Health Professions Division
3200 South University Dr.
Nova Southeastern University
Ft. Lauderdale, FL 33328-2018



Professional Interests

Higher education administration and leadership; corporate governance; entrepreneurship; diversity, equity and inclusion; research on latent variable modeling (finite mixture modeling, latent class analysis, item response theory, and structural equation modeling) using behavioral, economic, and patient reported outcomes.

Professor Hardigan is founder and director of NSU’s Statistical Consulting Center.

Qualifications and Experience

2020 to Present	<p>Professor of Population Health; Senior Associate Dean of Research for the College of Allopathic Medicine (NSU MD); Director for the Cell Therapy Institute (CTI)</p> <p>The Health Professions Division (HPD) stands as NSU's premier center of academic and research excellence, encompassing seven colleges and three research institutes. As the largest division within the university, we take pride in educating 60% of the students and employing 70% of the university-sponsored faculty. In my capacity, I am accountable for overseeing vital aspects of research support, facilities, and safety programs, as well as managing budgets for the health professions division, NSU MD, and CTI. My responsibilities encompass supervising cost-sharing funds and budgets that exceed \$10 million to drive sponsored research. Additionally, I supervise and guide faculty, staff, post-docs, and undergraduate, professional, and students, nurturing a collaborative environment to advance our College's mission. This involves providing essential start-up funds, establishing high merit and promotion standards, and offering impactful faculty development programs. I also represent the College within the University and orchestrate engagement with various external groups. This includes spearheading the establishment of NSU MD-HCA research day, a celebration of the research work carried out by HCA residents and NSU MD students, and securing \$50,000 for research scholarships. I played a pivotal role in NSU obtaining preliminary R1 status in 2025, and the college achieving full accreditation in 2024. As the research dean of one of NSU's top academic units, I am dedicated to providing exemplary leadership and making a substantial impact across the University.</p>
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<p>2003 to 2020</p>	<p>Professor of Public Health Executive Dean of Academic Affairs for the Health Professions Director Center for Teaching and Learning</p> <p>During my tenure as NSU's Executive Dean of Academic Affairs for the Health Professions, I spearheaded numerous impactful initiatives. These included successfully securing funding to establish the Center for Teaching and Learning and crafting a Faculty Instructional Handbook with an interactive program for effective classroom instruction and evaluation. Additionally, I championed the creation of NSU's first lactation rooms, wielded influence on college merit and promotion committees, and actively engaged with the community through organizations like the Broward County Coalition for the Homeless. I managed budgets exceeding \$5 million, instructed a wide range of students, and sustained an active externally funded research program. My pivotal role in advancing the health professions division's assessment and faculty development efforts, along with implementing innovative educational technologies and testing strategies, has left a positive impact on the institution.</p>
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<p>2001 to 2003</p>	<p>Associate Professor Associate Dean, College of Allied Health</p> <p>Throughout my tenure as Associate Dean, I provided robust academic and research leadership to a team of 35 full-time faculty members spanning six departments, overseeing an annual budget exceeding \$10 million. Notable achievements during this period include: 1. Successfully reorganizing the College of Allied Health into five distinct departments: physical therapy, occupational therapy, physician assistant, audiology, and health sciences. 2. Spearheading the development of new continuing contract and promotion standards that unequivocally emphasized both research and teaching excellence. 3. Conducting an exhaustive academic review of all College of Allied Health doctoral programs to enhance teaching and learning, with a specific focus on the interdisciplinary nature of the programs to better cater to the students' needs.</p>
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<p>1999 to 2001</p>	<p>Associate Professor of Pharmacy Director of the Testing Center</p> <p>During my tenure as director, I provided leadership and support to faculty and staff in educational assessment, psychometrics, and faculty development. My impactful responsibilities encompassed spearheading innovative educational assessment initiatives, crafting an interactive faculty and instruction course evaluation system, delivering courses in research design and statistics, conducting and publishing pioneering research, overseeing graduate students, and offering invaluable service to area organizations.</p>
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<p>1997 to 1999</p>	<p>Assistant Professor of Pharmacy University of Wyoming</p> <p>Taught courses in marketing, management and social/behavioral pharmacy. Conducted and published original research, supervised students, and provided service to area organizations.</p>
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Education

<p>Ph.D.</p>	<p>1996</p>	<p>University of Wyoming Major: Cognitive Science</p>
<p>MBA</p>	<p>1991</p>	<p>University of Wyoming Major: Marketing</p>
<p>BS</p>	<p>1987</p>	<p>Ferris State University Major: Marketing</p>

Awards, Honors & Community Engagement

- Over \$9 million in grants and contracts as principal investigator or co-investigator.
- Over 300 scientific peer-reviewed publications, abstracts, and publications.
- Patent for predictive technology and first spinoff from NSU's invention.
- Statistical consultant to healthcare and biotechnology companies.
- Supervisory Committee Member of Bright Star Credit Union (Assets ~ \$1 billion).
- President of the Association for the Behavioral Sciences and Medical Education (ABSAME).
- Consultant and researcher with Broward County Collation for the Homeless, Urban League, Broward County Children Services Council, and Broward Regional Health Planning Council.
- Kiran C. Patel College of Allopathic Medicine Professor of the Year Award recipient in 2022.
- Member of Bioflorida and the Florida Research Consortium.

- Member of the Consortium for Excellence in Medical Education in South Florida, the governing body for Osteopathic medical residencies in South Florida.
- Chief statistician and research advisor for International Health Initiatives (IHI), assisting with global health capacity-building projects including initiatives in Zambia, India, Haiti, Rwanda, Sierra Leone, Ghana, Nepal, and Kenya.
- Chief biostatistician for phase I-IV clinical trials.
- Recipient of campus-wide teaching awards at the University of Wyoming and Nova Southeastern University.
- Lester Janoff Publication Award Recipient.
- International Conference of Consortium of Multiple Sclerosis Centers (CMSC) Research Award.
- Nova Southeastern University Presidential Research Grant Award (2001-2002, 2010-2024) recipient.
- University of Wyoming Health Sciences Annual Research Achievement Award recipient.

Entrepreneurship and Patent

- **US US8521490B2** ICT specially adapted for medical diagnosis, medical simulation or medical data mining; ICT specially adapted for detecting, monitoring or modelling epidemics or pandemics for computer-aided diagnosis, e.g. based on medical expert systems
- Researcher and stockholder for HitCheck, a smartphone based neurocognitive diagnostic company that has developed an app that tests various aspects of the brains functioning.

Leadership Positions, Nova Southeastern University

Kiran C. Patel College of Allopathic Medicine (NSU MD) (Jan. 19 - Present)

As the Senior Associate Dean for Research, I provide dynamic leadership and oversee all aspects of the College's research mission. In this role, I am responsible for guiding research scientists and faculty, managing budgets, fostering alumni and community engagement, nurturing government and industry relations, and driving fundraising efforts. I collaborate closely with faculty and staff to propel the College's research and academic mission forward, while also serving as the College's representative within the University. My diverse responsibilities encompass ensuring research safety, facilitating undergraduate and graduate research programs, nurturing faculty development, evaluating and mentoring research faculty, and engaging with external constituencies. Since my appointment, research expenditures have surged by an impressive 200%, and we have secured 15 active external awards amounting to over \$10 million. Notably, I have been instrumental in advancing NSU towards R1 status and have successfully led a university-wide committee in securing vital start-up funds for faculty.

- **Faculty recruitment, mentoring, and retention.** It is important to have a strategy that encourages diversity and excellence while ensuring fair pay for faculty without increasing student tuition. Since NSU relies on tuition for 70% of its funding, we had to develop creative funding models to support the College's research activities. One approach was to expand and promote our data science center to generate revenue through partnerships with industry, hospitals, and the community. Another approach was active fundraising. Through these efforts, I have been able to provide salary and research support to faculty, staff, postdocs and students. It's worth noting that in addition to higher salaries, fostering and retaining faculty

also involved creating interdisciplinary mentoring programs, connecting faculty with campus resources, providing networking opportunities, supporting faculty development, and offering start-up funds for faculty and student research.

- **Increasing and diversifying the extramural funding portfolio.** The allocation of federal grant funding, particularly from organizations like NIH, CDC, and NSF, is increasingly limited, with a smaller number of institutions receiving a larger share of the funding. This creates a pressing need for research administrators to explore and advocate for viable alternatives. In my role as an associate dean, I have successfully cultivated strategic partnerships between NSU, industry (Health Cooperation of America), and community organizations (Childrens Services Council). By placing emphasis on data science and health disparities, we have successfully broadened our external funding sources, reducing our dependence on federal grants. Moreover, engaging with the community yields far-reaching benefits, extending the positive impact well beyond our immediate academic environment. It is fundamental for public universities to fulfill their mission of serving their communities, and we all stand to gain from this commitment.
- **Developing infrastructure.** Since 2010, I've spearheaded the management of shared research facilities for the Colleges of Pharmacy, Medicine, and Dental Medicine. At the behest of the Chancellor, I've crafted a proposal for a new educational and research space, which is currently in the process of being realized. Furthermore, through strategic efforts, I successfully established the pioneering university partnership with the Health Corporation of America (HCA) to fund a cutting-edge, multi-million dollar research lab focused on nanotechnologies. The key to my success lies in effective planning and comprehensive engagement with all stakeholders, thus securing much-needed external funding to bolster our research and educational infrastructure.
- **Undergraduate and Graduate Education.** As the research dean, my foremost objective is to establish NSU MD as the premier choice for students, postdoctoral scholars, and residents. With a wealth of experience spanning over 25 years in education, I have effectively engaged with undergraduate, master's, and doctoral students, as well as postdoctoral scholars and residents in the pharmacy, dental, and medical fields. I am accountable for overseeing funding for undergraduate and graduate research, including travel and stipend support. Through collaborative efforts with NSU administration, I have played a pivotal role in developing a Master's in Biomedical Sciences program and am presently dedicated to establishing an MD/PhD program in partnership with an academic hospital. I successfully secured \$50,000 to establish the first NSU scholarship for medical students aspiring to take a gap year to pursue a research career.
- **Advancing Diversity, Equity, Inclusion, and Belonging.** I am fully committed to driving diversity and social equity within the university. I have proactively mentored and advanced underrepresented faculty and staff within HPD, ensuring their progression into leadership roles. At NSU MD, I spearheaded a significant transformation in faculty research leadership, achieving a remarkable 70% representation of women and/or underrepresented minorities in research positions. Additionally, I pioneered a summer research program tailored for minority students and have been actively supporting research initiatives in local communities such as the Urban League. My role as the chief statistician on projects involving the American Medical Women's Association has further solidified my dedication to enhancing diversity and representation. Moreover, I take pride in funding research initiatives within NSU MD's DEI office.

Executive Director for Assessment, Evaluation, and Faculty Development (2003 - 2019)

In 2003, I was appointed by the chancellor to assume the newly established role of Executive Director of Assessment, Evaluation, and Faculty Development. At the core of this position are four fundamental goals: (1) Foster exceptional research, scholarship, and creative interprofessional endeavors among faculty, staff, and students. (2) Collaborate with university and college administration to pioneer new research directions that elevate the HPD's impact on new knowledge and the national reputation of NSU, (3) Work closely with HPD deans to establish comprehensive academic priorities for educational assessment, accreditation, and faculty development; and (4) Serve as the academic liaison from HPD on university and colleges' accreditation committees

- **Faculty Development.** During my tenure as executive director, I successfully secured funding and established The Center for Teaching and Learning, a crucial resource dedicated to enhancing faculty practices and improving student learning experiences, whether in traditional or online settings. The center hosted monthly seminars covering a wide range of instructional topics, all offered at no cost to NSU faculty members. Additionally, it provided personalized faculty counseling, classroom performance evaluations, and valuable feedback. The center also responded promptly to quick queries via email and compiled a comprehensive handbook offering practical guidance on initiating classes and refining teaching methods. Moreover, our library of books and videotapes on teaching was made available for loan to interested faculty on a first-come, first-served basis. Furthermore, we organized an annual new faculty orientation to showcase the wide array of services and resources available. Finally, obtained funding and staff support for NSU's first lactation room.
- **Assessment.** I was responsible for providing guidance in curriculum development, program review, and academic policy in collaboration with faculty from various colleges and deans at NSU. My extensive interdisciplinary experience has been instrumental in numerous accreditation reviews. Notable achievements include the successful implementation of a health profession division-wide course and instructor evaluation system, the establishment of a health profession division-wide inter-professional day, and the creation of a comprehensive longitudinal assessment program to evaluate students' critical thinking skills, learning, and cognitive styles.
- **Evaluation.** In my capacity as executive director, I led all testing and curriculum mapping system operations within the health professions division. I successfully implemented a proctoring program for ADA students, offered expert consultation to colleges to develop suitable grading criteria, and presided over the health professions division educational technology committee.
- **Accreditation.** As the liaison from HPD, I played a pivotal role in helping colleges develop their campus organizations and prepare for successful accreditation reviews. These reviews encompassed both comprehensive evaluations and any subsequent follow-on reviews mandated by accreditation bodies. I have worked with SACS, CODA, ACPE, AOA, and LCME accreditation groups.
- **Undergraduate and Graduate Education.** Lead the creation of an inter-professional Ph.D. program with the colleges of Osteopathic Medicine (DO), Allopathic Medicine (MD), Pharmacy, Dental Medicine, Health Care, and Optometry. Co-lead the reorganization and merger of the College of Medical Sciences (CMS) with the College of Allopathic Medicine. CMS held over 45 faculty with a budget of over \$15 million.

Associate Dean, College of Allied Health (2001 - 2003)

As Associate Dean, I provided academic and research leadership to 45 full-time faculty members from six departments with an annual budget exceeding 10 million dollars. Notable accomplishments during my tenure include: (1) Reorganizing the College of Allied Health into five distinct departments, namely physical therapy, occupational therapy, physician assistant, audiology, and health sciences, (2) Developing new continuing contract and promotion standards that emphasized both research and teaching excellence; and, (3) Conducting a comprehensive academic review of all College of Allied Health doctoral programs to enhance teaching and learning, particularly focusing on the interdisciplinary nature of the programs to better serve the students' needs.

FUNDRAISING

- 2004: Broward County Medical Association. HPD Research Day [\$50,000]. Nova Southeastern University.
- 2013: Humanizing Health Care: Reducing Disparities through Interprofessional Teams. Josiah Macy Jr. Foundation [\$100,000]. Association for the Behavioral Sciences and Medical Education.
- 2014: Confronting Issues of Hierarchy and Power. The Arnold P. Gold Foundation [\$130,000]. Association for the Behavioral Sciences and Medical Education.
- 2024: Research scholarships for medical students [\$50,000]. Kiran C. Patel College of Allopathic Medicine.

RESEARCH GRANTS (9 Million)

Ongoing Research Support

The State of Health for Hispanic and Black Communities in Broward County

Hardigan, Patrick (PI) [\$50,000]

09/01/24–06/30/25

Studying, analyzing, and presenting health and socioeconomic data within minority communities in Broward County

Role: Principal Investigator (5% effort)

Florida Breast Cancer Foundation (Latimer, PhD-PI) [\$100,000]

07/01/22–06/30/24

Impact of S. Florida environmental chemicals on breast cells derived from women of different ancestries. To explore the interactive influences of breast cancer risk factors environmental chemicals on breast cells derived from women of different ancestries.

Role: Co-I (3% effort - Lead Data Scientist)

W81XWH-22-ALSRP-PCTA

CDMRP Amyotrophic Lateral Sclerosis Pilot Clinical Trial Award

Tabor-Gray, Lauren (PI), [\$560,000]

09/2023-09/2026

Combined Respiratory Training to Improve Pulmonary and Cough Function in ALS

The goal is to identify efficacious interventions to improve the management of respiratory and airway clearance decline in persons with ALS.

Role: Co-Investigator (5% effort - Lead Data Scientist)

75D30120C09554 (Klimas, MD - PI) [\$4,641,927]

09/14/2020 - 09/13/2025

Myalgic Encephalomyelitis/Chronic Fatigue Syndrome (ME/CFS): A Sequelae of COVID 19 Infection

The goal to understand the long term impact of acute COVID-19 infection on the risk of developing ME/CFS or ME/CFS-like symptomatology, and potentially lead to early intervention strategies and targeted approaches, the focus of much of our groups' ongoing ME/CFS research and clinical practice efforts.

Role: Co-Investigator (10% effort - Lead Data Scientist)

R01 DE029709-01 (Kawai, Ph.D.- PI) [\$361,000]

04/01/20 -03/31/25

NIH NIDCR

Osteoimmunology of Retarded Bone Regeneration in Periodontitis

This study will, for the first time, elucidate the pathologic osteoimmunological mechanism that interrupts new bone formation in alveolar bone affected by periodontitis, thus, representing a potential paradigm shift in the development of novel periodontitis therapies.

Role: Co-Investigator (5% effort - Lead Data Scientist)

R01 DE030016 (Kawai, Ph.D.-PI) [\$435,378]

07/01/20 -06/30/24

NIH NIDCR

Digital Enzyme Amperometric Gingiprobe for Diagnosis of Periodontitis

This study propose to develop an intraoral device, Gingiprobe, to measure in situ eATP and lactate produced in GCF of patients with periodontitis.

Role: Co-Investigator (5% effort - Lead Data Scientist)

Completed Research Support

Alessandara Posey, D.O.(PI) [\$150,000]

5/19/18-5/19-22

American Osteopathic Association

To continue to equip all stakeholders with a comprehensive, yet understandable knowledge of concussions and other sports related injuries

Role: Co-Investigator (5% effort- Lead Data Scientist)

R21 DE028715 01A1 (Kawai, Ph.D.-PI) [\$199,695]

06/01/20 -05/31/22

NIH IDCR

POC biosensor for Periodontitis

Specific aim: To validate POC SMARTChip® measurements of eATP and eADO in GCF for the diagnosis periodontitis and prediction of treatment-related bone regenerative activities.

Role: Co-Investigator (5% effort- Lead Data Scientist)

1R15 DE027851-01A1 (Kawai, Ph.D. - PI) [\$453,000]

12/15/19 -12/14/22

NIH NIDCR

Role of platelets in periodontal bone remodeling

This study will 1) establish the pathophysiological role of platelets in the context of inflammatory bone resorption lesion of periodontitis, 2) elucidate the molecular mechanism that arrests platelet-mediated bone regeneration in periodontitis, and, based on insights gained from 1) and 2), 3) develop a new approach to improve the effects of platelet-mediated bone regenerative therapy applied to periodontitis

Role: Co-Investigator (2% effort- Lead Data Scientist)

5U45ES019350-12 (Grant & Cohen-PI) [\$950,000]

08/17/2010 – 05/31/2022

NIEHS

Project SEAMIST (South East Area Maritime Industry Safety Training)

The aim to provide safety and hazardous preparedness training to over 9,000 maritime workers in both English and Spanish, provide disaster response training, provide new disaster preparedness training and continue to revise, optimize and enhance our training curricula and evaluation protocols.

Role: Co-Investigator (13% effort- Lead Data Scientist)

Oneka B. Marriott, Ph.D. (PI) [\$15,000]

Franklin Kenyon Cancer Research Grant

6/1/15 - 12/1/17

Situational Analysis and Needs Assessment in Children's Cancer in Rwanda.

This study will investigate the incidence and prevalence of HPV disease among HPV-at-risk Rwandans.

Role: Co-Investigator (5% Effort- Lead Data Scientist)

Patrick Hardigan, Ph.D. (PI) [\$30,000]

6/1/14 – 11/1/17

BRHPC Research Grant

Behavioral sciences research award to examine determinants of substance abuse in Broward County.

Role: Principal Investigator (20% Effort)

Patrick Hardigan, Ph.D. (PI) [\$225,000]

5/15/12 - 5/15/15

CDC & State of Florida

Medical Monitoring Project

The primary purpose of this protocol is to provide a consistent method for U.S. state and local health departments to use in collecting data on behaviors and clinical outcomes from a probability sample of adults who received care for HIV infection or AIDS in their jurisdictions.

Role: Principal Investigator (20% Effort)

Patrick Hardigan, Ph.D. [\$25,000]

11/15/11 - 11/15/15

Franklin Kenyon Cancer Research Grant

This is a national study that is examining variability in response rate, response bias, missing and incomplete data, and response speed based on instrument length and instrument design.

Role: Principal Investigator (20% Effort)

María Isabel Fernández, Ph.D. (PI) [\$425,000]

9/30/08-9/29/13

CDC Project POWER: A HIV RISK Reduction Intervention for Black Men.

The goal of this grant is to develop and conduct a preliminary test of an HIV risk-reduction intervention for black men who have sex with men and women.

Role: Co-Investigator (5% Effort- Lead Data Scientist)

Cyril Blavo, D.O. (PI) [\$125,000]

Franklin Kenyon Cancer Research Grant

4/15/10 - 12/31/12

Knowledge of HPV vaccine among HPV-at-risk African American Population of Broward County.

This study will investigate the knowledge, awareness and reasons for not vaccinating against HPV disease among HPV-at-risk African American Population of Broward County.

Role: Co-Investigator (20% Effort- Lead Data Scientist)

M. Isabel Fernández, Ph.D. (PI) [\$450,000]

9/30/06-9/29/11

Centers for Disease Control and Prevention

Proyecto SOL: A Risk Reduction Intervention for Hispanic MSM

Proyecto SOL is a culturally based, group level intervention to reduce risk of acquisition or transmission among HMSM. In this application, we propose to participate in an initiative to examine preliminary efficacy of promising behavioral interventions for HMSM that has both collaborative and site specific components. HIV

Role: Co-Investigator (5% Effort- Lead Data Scientist)

Jose Calderon, M.D. (PI) [\$150,000]

CMS

9/01/09 - 9/30/11

Diabetes LIteracy and Self-Efficacy Screening and Training Project

Efficacy study of a pharmacist diabetes intervention among hispanic immigrants

Role: Co-Investigator (20% Effort- Lead Data Scientist)

Noel Sangasubana, Ph.D. (PI) [\$65,000]

HRSA

6/01/08 - 05/29/10

This study will measure the effectiveness of pharmacists as information providers for over-the-counter medications.

Role: Co-Investigator (5% Effort- Lead Data Scientist)

Jose Calderon, M.D. (PI) [\$45,000]

4/01/08-4/30/08

Historically Black College or University

Nationally Historically Black College or University for Health Services Research Grant Writing Workshop. This workshop provided instruction in grant writing techniques to minority attendees.

Role: Co-Investigator (10% Effort- Lead Data Scientist)

Mark Sandhouse, DO (PI) [\$135,000]

8/01/03 - 07/31/06

Osteopathic Heritage Foundation

Effect of Cranial Osteopathic Treatment on Visual Function. Measure the effectiveness of osteopathic manipulation on visual acuity.

Role: Co-Investigator (10% Effort- Lead Data Scientist)

Patrick Hardigan, Ph.D. (PI) [\$75,000]

5/01/00 - 04/31/02

Amira

Phase Four Clinical Trial. Post Marketing Surveillance Trial for a glucose monitor

Role: Principal Investigator (20% Effort)

Patrick Hardigan, Ph.D. (PI) [\$45,000]

5/01/98 - 04/31/99

National Association of Chain Drug Stores Education Foundation

Investigate the selection process and personality of pharmacy school applicants.

Role: Principal Investigator (10% Effort)

PEER-REVIEWED PUBLICATIONS (H-Index = 33)

1. Cavanaugh G, **Hardigan P**, Ownby R, et al. (July 09, 2024) Formative Assessment and Cluster Membership of Homeless Persons' Emergency Department Visits. *Cureus* 16(7): e64188. doi:10.7759/cureus.64188.
2. Acevedo D, Garcia JR, Grewal RS, Vankara A, Murdock CJ, **Hardigan PC**, Aiyer AA. (2024) Comparison of rerupture rates after operative and nonoperative management of Achilles tendon rupture in older populations: Systematic review and meta-analysis. *J Orthop.* 22(52):112-118. doi: 10.1016/j.jor.2024.02.034. PMID: 38445100; PMCID: PMC10909967.
3. Elshafei, A., Nehrenz, G., **Hardigan, P.**, & Becker, E. A. (2023). Prediction of Hospital Readmission Using the CORE and the CORE+ Scores in Participants With COPD. *Respiratory Care* October 2023, 68 (Suppl 10) 3904070.
4. Ostos, C., Quinones, V. V., Menchaca, K., Jones, C., Duchow, M., Isaac, S., & **Hardigan, P.** (2023). Occurrence and Outcomes of Acute Cerebrovascular Events in Patients with Non-Hodgkin Lymphoma. *Blood*, 142(Supplement 1), 6137. <https://doi.org/10.1182/blood-2023-188049>
5. Rheingold SZ, Raval C, Gordon AM, **Hardigan P.** Zinc Supplementation Associated With a Decrease in Mortality in COVID-19 Patients: A Meta-Analysis. *Cureus.* 2023 Jun 10;15(6):e40231. doi: 10.7759/cureus.40231. PMID: 37435275; PMCID: PMC10332820.

6. Quagliano, A., Acevedo, D., **Hardigan, P.C.**, Prasad, S. (2023). Using Clustered Regularly Interspaced Short Palindromic Repeats gene editing to induce permanent expression of fetal hemoglobin in β -thalassemia and sickle cell disease: A comparative meta-analysis. In R. Maitta, H. Reeves, M. Fontaine, & F. Pirenne (eds.) *Developments in Sickle Cell Disease Therapy and Potentials for Gene Therapy*. *Frontiers in Medicine-Hematology* (pp. 61-67). *Frontiers in Medicine*.
7. Colon, J., Mirkin, S., **Hardigan, P.C.**, elias, M.J., Jacobs, R.J. (2023) Adverse Adverse Events Reported From Hyaluronic Acid Dermal Filler Injections to the Facial Region: A Systematic Review and Meta-Analysis. *Cureus* 15(4): e38286. doi:10.7759/cureus.38286.
8. Elsouiri, K. N., Arboleda, V., Basbous, L., Heiser, S., Collins, D. P., Ragusa, P. **Hardigan,**... & Beckler, M. D. (2023). Glucocorticoid use in rheumatoid arthritis patients and the onset of pneumonia: a systematic review and meta-analysis. *Journal of Osteopathic Medicine*, 123(4), 179-186.
9. Kim J, Blum B, Kaushal S, Khan S, **Hardigan P.C.**, Villalba CA. Impact of Psychiatry Clerkship Rotation in Attitudes Towards Mental Illness and Psychiatry as a Career Among Medical Students. *HCA Healthc J Med*. 2023 Dec 30;4(6):415-420. doi: 10.36518/2689-0216.1569. PMID: 38223472; PMCID: PMC10783562.
10. Quagliano, A., Acevedo, D., **Hardigan, P.C.**, Prasad, S. (2022). Using CRISPR Gene Editing to Induce Permanent Expression of Fetal Hemoglobin in β -Thalassemia and Sickle Cell Disease: A Comparative Meta-Analysis. *Frontiers in Medicine-Hematology*. Sep 29;9:943631. doi: 10.3389/fmed.2022.943631. PMID: 36250099; PMCID: PMC9556862.
11. Bested A.C., Rana A.F., **Hardigan, P.C.**, Niyirora, J., Cheema, A., Antony, G., Defina, P.A., Machado, C. (2022). A Case Series of 39 United States Veterans with Mild Traumatic Brain Injury Treated with Hyperbaric Oxygen Therapy. *Clin. Transl. Neurosci.*: 6(21). <https://doi.org/10.3390/ctn6030021>.
12. Castrillon J.M., Piermatti J., Achong-Bowe R., **Hardigan P.C.**, Thompson J. Frictional wear of stud implant overdenture abutments after 2 years of in vitro simulated function. (2022). *General Dentistry*. Sep-Oct;70(5):54-57. PMID: 35993934.
13. Shindo, S.; Savitri, I.; Ishii, T.; Ikeda, A.; Pierrelus, R.; Heidari, A.; Okubo, K.; Nakamura, S.; Kandalam, U.; Rawas-Qalaji, M.; Leon, E.; Pastore, M.; **Hardigan, P.**; Kawai, T. (2022). Dual-Function Semaphorin 4D Released by Platelets: Suppression of Osteoblastogenesis and Promotion of Osteoclastogenesis. *Int. J. Mol. Sci.*, 23(6), 2938; <https://doi.org/10.3390/ijms23062938>.<https://www.mdpi.com/1422-0067/23/6/2938>.
14. Ishii, T.; Ruiz-Torruella, M.; Yamamoto, K.; Yamaguchi, T.; Heidari, A.; Pierrelus, R.; Leon, E.; Shindo, S.; Rawas-Qalaji, M.; Pastore, M.; Ikeda, A.; Nakamura, S.; Mawardi, H.; Kandalam, U.; **Hardigan, P.**; Witek, L.; Coelho, P.; Kawai. (2022). T. Locally Secreted Semaphorin 4D Is Engaged in Both Pathogenic Bone Resorption and Retarded Bone Regeneration in a Ligature-Induced Mouse Model of Periodontitis. *Int. J. Mol. Sci.*, 23(10), 5630; <https://doi.org/10.3390/ijms23105630>.<https://www.mdpi.com/1422-0067/23/10/5630>.

15. Cushion S, Arboleda V, Hasanain Y, Demory Beckler M, **Hardigan P**, Kesselman MM. Comorbidities and Symptomatology of SARS-CoV-2 (Severe Acute Respiratory Syndrome Coronavirus 2)-Related Myocarditis and SARS-CoV-2 Vaccine-Related Myocarditis: A Review. 2022 Apr 12. *Cureus*;14(4):e24084. doi: 10.7759/cureus.24084. PMID: 35573496; PMCID: PMC9099161.
16. Gordon AM & **Hardigan PC**. A Case-Control Study for the Effectiveness of Oral Zinc in the Prevention and Mitigation of COVID-19. *Front Med (Lausanne)*. 2021 Dec 13;8:756707. doi: 10.3389/fmed.2021.756707. PMID: 34966750; PMCID: PMC8711630.
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130. Bejar, L., Coulter, R.A., Shallo-Hoffman, J., Blavo, C., & **Hardigan, P.C.** (2001). Detecting visual problems in pre-school children: A double blind vision screening study. *Investigative Ophthalmology and Visual Science*, 1.
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132. Coulter, R.A., Shallo-Hoffman, J., & **Hardigan, P.C.** (2001). The presumed influence of attention on accuracy in the developmental eye movement (DEM) test. *Optometry and Vision Science*, 10:1.
133. **Hardigan, P.C.**, & Carvajal, M.J. (2001). Linking job satisfaction and career choice with personality styles: an exploratory study of practicing pharmacist. *Journal of Psychological Type*.57,30-35.
134. **Hardigan, P.C.**, Lai, L.L., & Robeson, A. (2001). The significance of academic merit, tests scores, and interviews in the admission process: A case study. *American Journal of Pharmaceutical Education*, 65,45-54.
135. **Hardigan, P.C.**, Lai, L.L. & Carvajal, M.J. (2000). The influence of positive and negative affectivity on reported job satisfaction among practicing pharmacists. *Journal of Pharmaceutical Marketing and Management*, 13(4),28-32.
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differences in response. *American Journal of Pharmaceutical Education*,64(4),420-425.

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138. **Hardigan, P.C.**, & Cohen, S.R. (1998). A comparison of osteopathic, pharmacy, physical therapy, physician assistant and occupational therapy students' personality styles: Implications for education and practice. *Journal of Pharmacy Teaching*, 32-36.
139. **Hardigan, P.C.**, & Cohen, S.R. (1998). A comparison of personality types among students enrolled in osteopathic, pharmacy, physical therapy, physician assistant and occupational programs: What the differences mean. *Journal of the American Osteopathic Society*, 98,637-641.
140. Carvajal, M.J., & **Hardigan, P.C.** (1998). Preferences and expectations of pharmacy students: Some inter-gender and inter-ethnic comparisons. *Journal of the American Pharmaceutical Association*, 39, 32-40.
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142. **Hardigan, P.C.** (1994). An investigation of learning contracts in pharmaceutical education. *American Journal of Pharmaceutical Education*, 58, 386-390.
143. **Hardigan, P.C.** (1994). Adult education and patient compliance: A curative collaboration. *Consultant Pharmacist*, 31-32.

PEER-REVIEWED ABSTRACTS AND CONFERENCE PAPERS

1. Hardigan, P.C. (2021). Preventing Elderly Falling Through Machine Learning. *TechConnect Briefs*; 2021,111-113.
2. Antevy, P., Epstein, C., & Hardigan, P.C. (2015). A Comparison of Medications in 38 Pediatric EMS Protocols to Those Listed on the Broselow-Length Based Tape. *American College of Pre-hospital Emergency Care*;19:140–17.
3. Antevy, P., Hardigan, P.C., Levy, R. (2014). Comparison of a hybrid pediatric weight estimation method Handtevy vs Broselow length based tape. *American College of Pre-hospital Emergency Care*;19:140–177
4. Bhoopathi V., Hardigan, P.C. (2013). Pre-pregnancy teeth cleaning and adverse pregnancy outcomes: Florida PRAMS Study. *IADR Annual Meeting (March 20-23), Seattle, Wa.*
5. Nguyen J.D., Kilinc E., Garcia-Godoy, C.E., Burch, J., Hardigan, P.C., & Shelling P. (2013). Evaluation of Antibacteria Activity in a Selenium Containing Orthodontic Resin. *IADR Annual Meeting (March 20-23), Seattle, Wa.*

6. Kilinc, E., Drukteinis S., Roshkind, D.M., Hardigan, P.C. (2011). Thermal Absorption of CO₂, Nd:YAG, Diode Lasers in Dental Materials. 83rd Annual Meeting of the International dental Research Association. Baltimore, Maryland.
7. Thome, D. Rothrock, J., Hardigan, P.C., Larumbe, J., & Garcia-Godoy-C. (2010). An evaluation of biaxial-flexural strength of flowable composites. IADR Annual Meeting (July 14-17), Barcelona Spain.
8. S.A. Antonson, Z Yilmaz, E. Kilinc, DE Antonson, Hardigan, P.C.. (2009). Fracture Resistance of Endodontically Treated Lower Incisors with Fiber Posts. IADR Annual Meeting (April 1-4), Maimi Florida.
9. H Krajewski C. Wiggins, CE Garcia-Godoy, F Garcia-Godoy, Hardigan, P.C.. (2009). Effect of APF Minute-Foam on Surface Roughness, Hardness of Nano-composites. IADR Annual Meeting (April 1-4), Maimi Florida.
10. C Coen, CE Garcia-Godoy, F Garcia-Godoy, Hardigan, P.C.. (2009). The Color Change Effects of Fluoride Varnishes on Nanocomposites. IADR Annual Meeting (April 1-4), Maimi Florida.
11. Antonson, S.A., Crutchfield, A.J. Brener, S., & Hardigan, P.C. (2008). Clinical Study on Surface Protection for Newly-Erupting Molars: 6-Month Results. AADR Annual Meeting (April 2-5), Dallas Texas.
12. Libov, C., Burch, J.G. & Hardigan, P.C. (2008). Assessment of Orthodontic Treatment Outcomes Using the PAR Index. AADR Annual Meeting (April 2-5), Dallas Texas
13. De Antonson, E. Kilinc, J.W. Thomas, D.E. Antonson, & Hardigan, P.C., (2006). Risk Analysis of Intrapulpal Heat Generation by High-Powered Curing Lights. The 84th Annual Meeting of the International Dental Research Association, Brisbane, Australia.
14. S. Antonson, E. Kilinc, J.W. Thomas, D.E. Antonson, Hardigan, P.C., & C. Michaud, (2006). Intrapulpal Temperature Rise Caused by Curing-Lights through Resin Composites. The 84th Annual Meeting of the International Dental Research Association, Brisbane, Australia.
15. S. Antonson, E. Kilinc, J.W. Thomas, D.E. Antonson, Hardigan, P.C. (2006). Thermographic Analysis of Intrapulpal Temperature Rise Caused by Curing Lights. The ADEA/AADR/CADR Meeting & Exhibition, Orlando, Fl.
16. Kilinc, E., Thomas, J., Antonson, S., Siegel, S., Hardigan, P.C. (2005). Efficiency of Dental Diamonds Burs of Different Size/type. 83rd Annual Meeting of the International dental Research Association. Baltimore, Maryland.
17. Kilinc, E., Thomas, J., Antonson, S., Siegel, S., Hardigan, P.C. (2005). Heat Transmission for Various Types of Composites during Finishing/Polishing. 83rd Annual Meeting of the International dental Research Association. Baltimore, Maryland.
18. Kilinc, E., Thomas, J., Antonson, S., Siegel, S., Hardigan, P.C. (2005). Thermographic Evaluation of Buccal/Pulpal Heat Generation Patterns. 83rd Annual Meeting of the International dental Research Association. Baltimore, Maryland.

19. Kilinc, E., Thomas, J., Antonson, S., Siegel, S., Hardigan, P.C. (2005). Diamond Burs and Dentin Thickness Effects on Dentin Thermal Diffusivity. 83rd Annual Meeting of the International dental Research Association. Baltimore, Maryland.
20. Glenn, B., , Cohen, J., Hardigan, P.C., Decarlo, A. (2005). Serum PAI-1 Antigen Levels, Generalized Periodontal Disease, and Heart Disease. 83rd Annual Meeting of the International dental Research Association. Baltimore, Maryland.
21. P. Villalta, P., Garcia-Gadoy, F., Hardigan, P.C. (2005). Effect of Home Bleaching Systems on Microhardness of Restorative Materials. 83rd Annual Meeting of the International dental Research Association. Baltimore, Maryland.
22. Glenn, B., , Cohen, J., Hardigan, P.C., Decarlo, A. (2005). Genomic Polymorphisms for PAI-1 and uPA Predict Severity of Periodontitis. 83rd Annual Meeting of the International dental Research Association. Baltimore, Maryland.
23. Hardigan, P.C. (2004). A measure of cheating behaviors between first and third-year pharmacy students. American Journal of Pharmaceutical Education. 68 (2) Article 54.
24. Lou, J.Q., Pierce, C., Alveraz, J., Hardigan, P.C., & Classen, S. (2003). Long-term effectiveness of a wellness program on the lives of people with multiple sclerosis; A randomized controlled trial (Phase II). 131 Annual conference of the American Public Health Association, san Francisco, CA.
25. Besada, E., Schatz, S., Barr, R., Hardigan, P.C., & McMunn, E. (2002). Comparison of the optic nerve, visual field and scanning laser polarimetry analysis of migraine sufferers and a non-migraine patient cohort. Optometry, JAOA,73,375.
26. Coulter, R.A., Oliver, P.R., Shallo-Hoffman, J., Blavo, C., Hardigan, P.C. (2002). The LEA and HOTV Visual Acuity tests: Which test is quicker and more able to be completed by pre-school children. Optometry, JAOA,73,377-378.
27. Coulter, R.A., Oliver, P.R., Shallo-Hoffman, J., Blavo, C., Hardigan, P.C. (2002). Preschool vision screening: Determining key differences. Optometry and Vision Science, 75,36.
28. Shallo-Hoffman, J., Coulter, R.A., Hardigan, P.C., & Balvo, C. A. Bejar, L. (2002). A double blind pre-school vision screening study: Preliminary findings. Neuro-Ophthalmology, 24:VI(4).
29. Shallo-Hoffman, J., Coulter, R.A., Hardigan, P.C., & Balvo, C. A. (2002). A Comparison of three visual acuity tests as a function of age in a pre-school vision screening study. Investigative Ophthalmology & Vision Science, 76, 45.
30. Sorkin, R., Shechtman, D., Sandhouse, M., Greenblatt, J., & Hardigan, P.C.. (2002). A double-blind study to determine the effects of Cranial Osteopathy of visual function. Optometry, JAOA,73,374-375.
31. Gettman, D.A., Patel, N., Harrington, C., & Hardigan, P.C. (2002). Predictors of pharmacy student perceptions to teacher's randomization class questions that assess student attendance and attention to lecture. Annual Meeting of the American Association of Colleges of Pharmacy, Kansas City, Missouri: 52.

32. Hardigan, P.C., Lai, L.L., Carvajal, M.J., & Lee, T. (2001) A comparison of job satisfaction among Taiwanese and U.S. Pharmacists. International Pharmaceutical Federation (FIP), Singapore, 1.
33. Garlal, M., Kuttler, S., Dorn, S., & Hardigan, P.C. (2001). Root canal preparation using two nickel titanium rotary systems: A comparison of specific features related to quality and safety of instrumentation. International Society of Endodontics, Madrid, Spain. 12
34. Anderson, H.H., Hardigan, P.C., Garcia-Barreras, V., & Rey, J. (2001). The use of personality studies to predict interaction of students at a distance learning site in a traditional entry-level doctor of pharmacy degree program. Annual Meeting of the American Association of Colleges of Pharmacy, Toronto, CA75s.
35. Bejar, L., Coulter, R.A., Shallo-Hoffman, J., Blavo, C., & Hardigan, P.C. (2001). Detecting visual problems in pre-school children: A double blind vision screening study. Investigative Ophthalmology and Vision Science, 1.
36. Coulter, R.A., Shallo-Hoffman, J., Blavo, C., Hardigan, P.C., & P., Bejar, L. (2001). Testability and outcomes: Is retesting necessary in screening pre-school children? Investigative Ophthalmology and Vision Science, 1.
37. Coulter, R.A., Shallo-Hoffman,, & Hardigan, P.C. (2001). The presumed influence of attention on accuracy in the developmental eye movement (DEM) test. Investigative Ophthalmology and Vision Science, 1.
38. Nix, I.B., Birch, J.G, Hardigan, P.C. (2001). Efficacy of the braun oral-b interdental plaque remover in orthodontic patients. Florida Society of Orthodontics., Tampa Bay, Florida.
39. J. Shallo-Hoffmann, R.A. Coulter, C. Blavo, Hardigan, P.C., L. Bejar (2000). A double-blind pre-school vision screening study: preliminary findings. European Neuro-Ophthalmological society, Tuebingen, Germany.
40. Hardigan, P.C., & Cohen, S.R. (2000). A content analysis of questions asked of 3rd year residents during sexual education programs. integrating culture and complementary medicine: Challenges to the biomedical paradigm. Association for the Behavioral Sciences and Medical Education, 29th Annual Meeting., 16.
41. Hardigan, P.C. (July, 1998). The significance of academic merit, test scores and faculty interviews on the admission process: A case study. 1998 AACP Annual Meeting Program and Abstract, 33.
42. Lai, L., Hardigan, P.C., & Carvajal, M.J. (July, 1998). Teaching research design and statistics in a nontraditional PharmD program via ISDN interactive distance learning system. 1998 AACP Annual Meeting Program and Abstract, 33.
43. Hardigan, P.C. (1998). Linking job satisfaction and career choice with personality styles: An exploratory study of practicing pharmacists. Journal of the American Pharmaceutical Association, 38(2), 288.
44. Carvajal, M.J., & Hardigan, P.C. (1998). Preferences and expectations of pharmacy students: Some inter-gender and inter-ethnic comparisons. Proceedings from the symposium for the eradication of

social inequality: The effects of race, class and gender on teaching and learning, (p. 28),
University of Wyoming, Laramie, WY.

45. Hsu, J., Ellington, T.M., Lai, L., Hardigan, P.C., & Robinson, M. (1997). Current use of high-dose aminoglycosides in hospitals throughout the United States. International Pharmaceutical Abstracts, 34(21), 2214.
46. Hardigan, P.C., & Cohen, S.R. (1997). Use of the Myers Briggs type indicator in medical education. outcomes research and evaluation: The ecology of assessment in medical education, Association for the Behavioral Sciences and Medical Education, 27th Annual Meeting.
47. Hardigan, P.C., & Rittenburg, T.L. (1995). Retail pharmacists' perceptions of consumer behavior motivations. Proceedings From the Symposium of Patronage and Retail Strategy: On the Cutting Edge IV, 36-39.

PEER-REVIEWED AND INVITED PRESENTATIONS

1. Gray, L., Chomko, K., Baruch, A., Hardigan, P.C., :Locatelli, E. (2024). Transcutaneous Spinal Electrical Stimulation for Spasticity in Patients with Primary Lateral Sclerosis: A Pilot Study, Annual NEALS Meeting (October 22, 2024).
2. Barnhart, H.B., Melin, M.M., Mayrovitz H., Sirkis N., Panunzio J., Hubbard, C., Ginsburg, S., & Hardigan, P.C. (2023). Weightlessness associated with cephalic fluid shifts: The potential to evaluate venous and lymphatic dysfunction. UIP World Congress & AVLS 37th Annual Congress. Miami Beach (September 17-21).
3. Pavlov, I, Klimas, N, Hardigan, P.; Lajevardi, A., Caine, D., Llanga, J., Cohen, D., Calero, M., Palacio, A. (2023). Post exertional malaise and unrefreshing sleep among people with Long COVID. IACFS/ME 2023 Clinical and Scientific Conference Stony Brook University, Stony Brook, New York (July 27 – 29).
4. Hardigan, P.C. (2021). Preventing Elderly Falling Through Machine Learning. TechConnect World Innovation Conference and Expo. Washington, DC (October 18-20).
5. Coetzee, S., Hardigan, P.C., Wrench, A. (2021). Seizures and Neurocysticercosis in United States and Its Demographic Implications. American Society for Microbiology.
6. Klimas, C., Hardigan, P.C., Cook, N., et.al. (2021). COVID-19: Understanding the Post-Viral Response (COVID UPP). International Association for Chronic Fatigue Syndrome/Myalgic Encephalomyelitis.
7. Huntley. K.S., Mintz, J., Wahood, W., Raine, S., Dicaro, M.V., Hardigan, P.C., Haffizulla, F. (2020). Evaluating the Associations of Enforced Government Directives on COVID-19 Incidence: An Interstate Statistical Analysis, American Public Health Association.
5. Lowman E, Unger N, Hardigan P & Lee N. Efficacy, Safety, and Tolerability of Switching Efavirenz/ Emtricitabine/Tenofovir disoproxil fumarate (EFV/FTC/TDF) to Bictegravir/Emtricitabine/Tenofovir

alafenamide (BIC/FTC/TAF) in Virologically Suppressed Adults with HIV-1 Infection. International AIDS Conference (2020); San Francisco, CA. Poster PEB0359.

6. Lowman E, Hardigan P, Unger N & Lee N. Associations with weight change and patient reported outcomes after switching from efavirenz/emtricitabine/tenofovir disoproxil fumarate (EFV/FTC/TDF) to bicitgravir/emtricitabine/tenofovir alafenamide (BIC/FTC/TAF). HIV Drug Therapy (2020); Glasgow, UK. Poster 077.
7. Garcia-Godoy, C., Kilinc, E., Antonson, S., & Hardigan, P.C. (2019). Reliability of universal adhesives' bond strength applied by various operators. International Association of Dental Research. Vancouver, CA (July 19-22).
8. Antonson, S., Blackwelder, P., Galka, A., Kilinc, E., Antonson, D., & Hardigan, P.C. (2019). Effect of prophylactic pastes on surface gloss of zirconia. International Association of Dental Research. Vancouver, CA (July 19-22).
9. Hogge, M., Doman, H., Antonson, S., & Hardigan, P.C. (2019). Image quality comparison between hand-held and wall-mounted x-ray units. International Association of Dental Research. Vancouver, CA (July 19-22).
10. Garcia-Godoy, C., Kilinc, E., Antonson, S., & Hardigan, P.C. (2019). Protective effect of fluoride varnishes on enamel after demineralization/toothbrush abrasion. International Association of Dental Research. Vancouver, CA (July 19-22).
11. Hogge, M., Doman, H., Antonson, S., & Hardigan, P.C. (2019). Effect of vibration on hand-held x-ray unit on image quality. International Association of Dental Research. Vancouver, CA (July 19-22).
12. Antonson, S. Alsharari T., Garashi M., Hardigan, P.C. (2018). Effect of Prophylactic Pastes on Surface Gloss of Ceramics. International Association of Dental Research. London, England (July 25-28).
13. Antonson, S. Alsharari T., Garashi M., Hardigan, P.C. (2018). Effect of Prophylactic Pastes on Surface Roughness on Resin Composites. International Association of Dental Research. London, England (July 25-28).
14. Jones, B.T., Real, S., Cooper, M., & Hardigan, P.C. (2017). Investigating lip protrusion aesthetics by comparing the facial profile view with an oblique view. Presented at the Southern Association of Orthodontists Conference. Tampa, Fl (October 5-7).
15. Hollar TL and Hardigan, P.C. (2017). "Public Policies to Solve Public Health Problems or Public Policies to Accomplish Something Else: An Exploratory Path Analysis of Adult Smoking, Tobacco Restriction Policies, and State Policy Liberalism." Presented at the Midwest Political Science Association's 75th Annual Conference, Chicago; April 6-9, 2017.
16. Hollar TL and Hardigan, P.C. (2016), "An evolution of state-level tobacco restriction policies: A longitudinal cluster analysis of changes in states' policies and sociodemographics from

2000-2010.” Presented at the American Public Health Association 144th Annual Meeting and Exposition, Denver, CO, October 30 – November 2, 2015

17. Ramos, C., Hardigan, P.C., McKenny, M.G., et. al. (2016). Prevalence and ethnic/racial disparities in the distribution of pediatric injuries in South Florida: implications for the development of community prevention programs. The World Federation of Associations of Pediatric Surgeons Tuesday, (October 8-11), Washington, DC.
18. Caballero J, Ownby RL, Jacobs RJ, Pandya N, Hardigan, P.C. (2016). The Relationship of Cognitive Function on Disease Outcomes in Older Hispanics with Type 2 Diabetes: A Pilot Study. Presented at the American College of Clinical Pharmacy Annual Meeting, Hollywood, FL, October.
19. Ramos, C., Hardigan, P.C., McKenny, M.G., et. al. (2016). Prevalence and Ethnic/Racial Disparities in the Distribution of Pediatric Injuries in South Florida: Implications for the Development of Community Prevention Programs. Pediatric Trauma Society, (November 9-11), Nashville, Tenn.
20. Hardigan, P.C., Hagen, K.P., Cohen, S.R., (2015). The application of the power-load margin with Health Professional Students. Association for Behavioral Sciences and Medical Education (October 13-15), Portland Oregon.
21. Antevy, P., Epstein, C., & Hardigan, P.C. (2015). A Comparison of Medications in 38 Pediatric EMS Protocols to Those Listed on the Broselow-Length Based Tape. American College of Emergency Physicians. (October 14-17), Boston, MA.
22. Antevy, P., Hardigan, P.C., Levy, R. (2014). Comparison of a hybrid pediatric weight estimation method Handtevy vs Broselow length based tape. American College of Emergency Physicians. (October 14-17), Boston, MA.
23. Besada, E. & Hardigan, P.C. (2014). Correlation of APD and SC OCT in Optic Neuropathy. The American Academy of Optometry Annual Meeting. (November 12-15), Denver, Co..
24. Shaer, K., Sherman, E., Shafiq, S., Hardigan, P.C. (2013). Exploratory survey of Florida pharmacist’s experience with knowledge of, and perceptions about HIV preexposure prophylaxis. The American College of Clinical Pharmacy Annual Meeting. (October 15), San Antonio, Tx.
25. Bhoopathi V., Hardigan, P.C. (2013). Pre-pregnancy teeth cleaning and adverse pregnancy outcomes: Florida PRAMS Study. IADR Annual Meeting (March 20-23), Seattle, Wa.
26. Nguyen J.D., Kilinc E., Garcia-Godoy, C.E., Burch, J., Hardigan, P.C., & Shelling P. (2013). Evaluation of Antibacteria Activity in a Selenium Containing Orthodontic Resin. IADR Annual Meeting (March 20-23), Seattle, Wa.
27. Hardigan, P.C. (2012). The Creation and Validation of the PLMI. 42nd. Annual Meeting of the Association for Behavioral Sciences and Medical Education (October 14-16), San Antonio Texas.
28. Calderon, J.L., Hardigan, P.C. (2011). The Need for Pharmacoepidemiology in Medical Education: A Transdisciplinary Best Practice. 41st. Annual Meeting of the Association for Behavioral Sciences and Medical Education (October 13-15), Portland Oregon.

29. Fecho, G.M., Tea, Y., Najman, P., & Hardigan, P.C. (2011). A Comparison of Associated Phoria Measurements Between a New Test for Fixation Disparity Versus the Wesson Fixation Card and AO Vectographic Slide. College of Optometrists in Vision Development (October 25-29), Las Vegas, Nevada.
30. Hernandez M., Pette G.A., Villanueva C., Hardigan, P.C. (2011). Effect of Patient Satisfaction, Implant Integration and Masticatory Function of Two Types of Immediately Loaded Implant Overdenture Systems, A Pilot Study with 12-Month Results. Academy of Osseointegration (March 3-5), Washington DC.
31. Natalie W., Shamus E., Johnson, K., Quershi, Y., Hardigan, P.C., Mehra, R., O'Connor, M. (2011). Association of Biomechanical Changes and Weight Gain Throughout Pregnancy. 116th Annual American Osteopathic Medical Meeting (October 30-November 1), Orlando Florida.
32. Thome, D. Rothrock, J., Hardigan, P.C., Larumbe, J., & Garcia-Godoy-C. (2010). An evaluation of biaxial-flexural strength of flowable composites. IADR Annual Meeting (July 14-17), Barcelona Spain.
33. S.A. Antonson, Z Yilmaz, E. Kilinc, DE Antonson, Hardigan, P.C.. (2009). Fracture Resistance of Endodontically Treated Lower Incisors with Fiber Posts. IADR Annual Meeting (April 1-4), Maimi Florida.
34. H Krajewski C. Wiggins, CE Garcia-Godoy, F Garcia-Godoy, Hardigan, P.C.. (2009). Effect of APF Minute-Foam on Surface Roughness, Hardness of Nano-composites. IADR Annual Meeting (April 1-4), Maimi Florida.
35. C Coen, CE Garcia-Godoy, F Garcia-Godoy, Hardigan, P.C.. (2009). The Color Change Effects of Fluoride Varnishes on Nanocomposites. IADR Annual Meeting (April 1-4), Maimi Florida.
36. Calderón JL, Baker RS, Sangasubana N, Bazargan M, Hardigan, P.C., Campos BS. (2009). Assessing and Promoting Breast Cancer Literacy and Preventative Behavior among Immigrant Latinas in South Los Angeles. AcademyHealth 2009 Annual Research Meeting. Chicago, Il.
37. Eulogio B, Kimberly R, Perla N, Shechtman D, Hardigan, P.C.. (2009). Brimonidine/Appraclonidine: Anterior Segmnet Effect. American Academy of Optometry. Orland, Fl.
38. Antonson, S.A., Yazici, R., Kilinc, E., Hardigan, P.C., Rothrock, C., Antonson, D.E. (2008). Evaluation of Various Resin Finishing/Polishing Systems on Surface Roughness and Gloss. PEF IADR. September 10-12. London, England.
39. Antonson, S.A., Crutchfield, A.J. Brener, S., & Hardigan, P.C. (2008). Clinical Study on Surface Protection for Newly-Erupting Molars: 6-Month Results. AADR Annual Meeting (April 2-5), Dallas Texas.
40. Libov, C., Burch, J.G. & Hardigan, P.C. (2008). Assessment of Orthodontic Treatment Outcomes Using the PAR Index. AADR Annual Meeting (April 2-5), Dallas Texas.

41. Hardigan, P.C. (2007). Value of Assessment within the Health Professions. Health Professional Education Research Symposium. Ft. Lauderdale, Florida.
42. Moehnke T, Sowka J, Hardigan, P.C., Shallo-Hoffman J. (2006). Topographical analysis of the optic nerve in migraine sufferers. American Academy of Optometry, Tampa, Florida.
43. De Antonson, E. Kilinc, J.W. Thomas, D.E. Antonson, & Hardigan, P.C., (2006). Risk Analysis of Intrapulpal Heat Generation by High-Powered Curing Lights. The 84th Annual Meeting of the International Dental Research Association, Brisbane, Australia.
44. S. Antonson, E. Kilinc, J.W. Thomas, D.E. Antonson, Hardigan, P.C., & C. Michaud, (2006). Intrapulpal Temperature Rise Caused by Curing-Lights through Resin Composites. The 84th Annual Meeting of the International Dental Research Association, Brisbane, Australia.
45. Hardigan, P.C. (2006). NSU Research. A presentation at the 3rd Annual Florida Tech Transfer Conference, Sarasota, Florida.
46. S. Antonson, E. Kilinc, J.W. Thomas, D.E. Antonson, Hardigan, P.C.. (2006). Thermographic Analysis of Intrapulpal Temperature Rise Caused by Curing Lights. The ADEA/AADR/CADR Meeting & Exhibition, Orlando, Fl.
47. Tu, K. M, Conover, G.R., & Hardigan, P.C. (2005). Changing trends in the teaching of anatomy. 4th Joint Meeting of the American Association of Clinical Anatomists and the British Association of Clinical Anatomists. New York, NY.
48. Tu, K. M, Conover, G.R., & Hardigan, P.C. (2005). The role of cadavers in problem based learning. 4th Joint Meeting of the American Association of Clinical Anatomists and the British Association of Clinical Anatomists. New York, NY.
49. Kilinc, E., Thomas, J., Antonson, S., Siegel, S., Hardigan, P.C. (2005). Efficiency of Dental Diamonds Burs of Different Size/type. 83rd Annual Meeting of the International dental Research Association. Baltimore, Maryland.
50. Kilinc, E., Thomas, J., Antonson, S., Siegel, S., Hardigan, P.C. (2005). Heat Transmission for Various Types of Composites during Finishing/Polishing. 83rd Annual Meeting of the International dental Research Association. Baltimore, Maryland.
51. Kilinc, E., Thomas, J., Antonson, S., Siegel, S., Hardigan, P.C. (2005). Thermographic Evaluation of Buccal/Pulpal Heat Generation Patterns. 83rd Annual Meeting of the International dental Research Association. Baltimore, Maryland.
52. Kilinc, E., Thomas, J., Antonson, S., Siegel, S., Hardigan, P.C. (2005). Diamond Burs and Dentin Thickness Effects on Dentin Thermal Diffusivity. 83rd Annual Meeting of the International dental Research Association. Baltimore, Maryland.
53. Glenn, B., , Cohen, J., Hardigan, P.C., Decarlo, A. (2005). Serum PAI-1 Antigen Levels, Generalized Periodontal Disease, and Heart Disease. 83rd Annual Meeting of the International dental Research Association. Baltimore, Maryland.

54. P. Villalta, P., Garcia-Gadoy, F., Hardigan, P.C. (2005). Effect of Home Bleaching Systems on Microhardness of Restorative Materials. 83rd Annual Meeting of the International dental Research Association. Baltimore, Maryland.
55. Glenn, B., , Cohen, J., Hardigan, P.C., Decarlo, A. (2005). Genomic Polymorphisms for PAI-1 and uPA Predict Severity of Periodontitis. 83rd Annual Meeting of the International dental Research Association. Baltimore, Maryland.
56. Hardigan, P.C. (2004). A measure of cheating behaviors between first and third-year pharmacy students. 105th Annual Meeting of the American Association of College of Pharmacy. Salt Lake City, Utah.
57. Pizzimenti, J.J., Oliver, P.R. Hardigan, P.C. (2004). Comparison of perimetry, contrast sensitivity, and visual acuity in patients with diabetes. American Academy of Optometry, Tampa, Florida.
58. Lou, J.Q., Peirce, C., Classen, S., Hardigan, P., & Alvarez, J. (2004). A Randomized Controlled Study on the Effectiveness of a Wellness Program for MS Population. Presented as a platform presentation at the Annual International Conference of Consortium of Multiple Sclerosis Centers (CMSC), June 2-6, Toronto, Canada.
59. Bade, A.A., Pizzimenti, J.J., Oliver, P.R. Hardigan, P.C. (2004). Cigarette smoking and cataract in patients with diabetes. American Academy of Optometry, Tampa, Florida.
60. Bade, A.A., Pizzimenti, J.J., Oliver, P.R. Hardigan, P.C. (2004). Risk factors for diabetic retinopathy. American Academy of Optometry, Tampa, Florida
61. Anita Angela Sharma, J. Burch, Hardigan, P.C. (2004). , Lower Inter-canine Uprighting and Arch Width Change with RPE. The 32st Annual Meeting and Exhibition of the AADR and IADR, Honolulu, Hawaii.
62. Sibel A. Antonson, Man Shu, Don Antonson, Hardigan, P.C. (2004). Effectiveness of Technique Demonstrations on Enamel Bond Strength. The 32st Annual Meeting and Exhibition of the AADR and IADR, Honolulu, Hawaii.
63. Kyle G. Baker, J. Burch, Hardigan, P.C. (2004). Sagittal Dental Changes Associated with Comprehensive Rapid Maxillary Expansion Therapy. The 32st Annual Meeting and Exhibition of the AADR and IADR, Honolulu, Hawaii.
64. Sibel A. Antonson, A. Ruya Yazici, Zeynep Okte, Hardigan, P.C., Patricia Villalta. (2004). Frequency Determination for Resealing Posterior Resin Composite Margins. The 32st Annual Meeting and Exhibition of the AADR and IADR, Honolulu, Hawaii.
65. Sibel A. Antonson, A. Ruya Yazici, Zeynep Okte, Patricia Villalta, Don Antonson Hardigan, P.C. (2004). Effect of Resealing on Microleakage in Relationship to Margin Design. The 32st Annual Meeting and Exhibition of the AADR and IADR, Honolulu, Hawaii.

66. Sibel A. Antonson, A. Ruya Yazici, Patricia Villalta, Zeynep Okte, Hardigan, P.C. (2004). Effectiveness of Re-Sealing Posterior Composite Restoration Margins. The 32st Annual Meeting and Exhibition of the AADR and IADR, Honolulu, Hawaii.
67. Sibel A. Antonson, Judith Gartner, Don Antonson, A. Ruya Yazici, Hardigan, P.C., Zeynep Okte (2004). A Comparison of Surface-Penetrating Sealants for Re-Sealing Resin Composite Margins. The 32st Annual Meeting and Exhibition of the AADR and IADR, Honolulu, Hawaii.
68. Christopher Demille, John Lude, James Burch, Hardigan, P.C. (2004). Appliance Induced Maxillary Mid-Palatal Suture Separation Associated With Age. The 32st Annual Meeting and Exhibition of the AADR and IADR, Honolulu, Hawaii.
69. Arthur Decarlo, Dawn Decarlo, William Balton, Li-Ping Lin, Julie Tyler, Bonnie Glenn, Joshua Cohen, Alejandro Aguado, Jeff Starkman, Schmul Stern, Hardigan, P.C. (2004). Relationship Of Serum Pai-1 Levels, Periodontitis, And Other Diabetes Complications. The 32st Annual Meeting and Exhibition of the AADR and IADR, Honolulu, Hawaii.
70. Bulleigh, C., Caponera, R., Nurch, J., & Hardigan, P.C. (2004). Lip profile changes associated with upper lip thickness and magnitude of maxillary incisor retraction. Florida Association of Orthodontics, Tampa Bay Florida.
71. Livrera, S., Burch, J., & Hardigan, P.C., P. (2004). Female profile preferences. Florida Association of Orthodontics, Tampa Bay Florida.
72. Shullman, H., Burch, J., Hardigan, P.C. (2004). Digital radiography vs. conventional radiography for detection of porion in cephalometric analysis. Florida Association of Orthodontics, Tampa Bay Florida.
73. DeCarlo, D.K., Balton, W., Tyler, J., Starkman, J., Stern, S., Gordon, C., Hardigan, P.C., & DeCarlo A.A. (2003). Association of Diabetic Retinopathy with Other Diabetes Complications. Annual Meeting of the American Academy of Optometry, Dallas, Texas.
74. Antonson, S.A., King, J.B., & Hardigan, P.C. (2003). Effects of cumulative clinical variables on heat rise during resin composite finishing and polishing. The 81st International Association for Dental Research, Goteborg, Sweden.
75. Antonson, S.A., King, J.B., & Hardigan, P.C. (2003). Composite resin finishing and polishing: the significance of individual clinical variables on heat rise. The 81st International Association for Dental Research, Goteborg, Sweden, June 25-28, 2003.
76. Antonson, S.A., King, J.B., Hardigan, P.C., Antonson, D.E. (2003). Individual temperature change patterns of different composites when finished and polished with various techniques. The 81st International Association for Dental Research, Goteborg, Sweden, June 25-28, 2003.
77. Antonson, S.A., King, J.B., & Hardigan, P.C. (2003). Heat generation and transmission assessment of composite finishing and polishing systems applied by different techniques. The 81st International Association for Dental Research, Goteborg, Sweden, June 25-28, 2003.

78. Classen, S., Pierce, C., Alvarez, J., & Hardigan, P.C. (2003). The effectiveness of a wellness program for people with multiple sclerosis--A randomized controlled trial. Preventive Medicine 2003 conference by the American College of Preventive Medicine, San Diego, CA, February 17-20, 2003.
79. Lou, J.C., Pierce, C., Classen, S., Hardigan, P.C., Alvarez, J. (2003). A randomized controlled trial on the effectiveness of a wellness program on the lives of people with multiple sclerosis. 14th Annual Art and Science of Health Promotion Conference by the Mayo Clinic, Washington, D.C., February 17-21, 2003.
80. Antonson, S. A., King, J.B., & Hardigan, P.C. (2003). Heat generation and transmission assessment of composite finishing and polishing systems applied by different techniques. The 31st Annual Meeting and Exhibition of the AADR San Antonio, TX, March 12-15.
81. Hardigan, P.C., Antonson, & S. A., King, J.B., (2003). Heat generation and transmission of various composite finishing and polishing systems applied by different techniques. The 31st Annual Meeting and Exhibition of the AADR San Antonio, TX, March 12-15.
82. Lyotard, N., Burch, J., Hardigan, P.C., & Robinson, P.R. (2003). Constructed occlusal plane and functional occlusal plane differences in skeletal class III malocclusions. The 31st Annual Meeting and Exhibition of the AADR San Antonio, TX, March 12-15.
83. Robinson, P.R., Burch, J., Hardigan, P.C., & Lyotard, N. (2003). Depth of the antegonial notch associated with specific diagnostic features of mandibular vertical development. The 31st Annual Meeting and Exhibition of the AADR San Antonio, TX, March 12-15.
84. Cabrera, S., Burch, J., & Hardigan, P.C. (2003). Unilateral posterior crossbite, mandibular asymmetry, and associated ramal heights, body lengths, and gonial angles. The 31st Annual Meeting and Exhibition of the AADR San Antonio, TX, March 12-15.
85. Lyotard, N., Burch, J., & Hardigan, P.C. (2003). Mandibular plane and palatal plane angle changes with immediate rapid palatal expansion. The 31st Annual Meeting and Exhibition of the AADR San Antonio, TX, March 12-15.
86. Greenblatt, J. Sandhouse, M., Shechtman, D., Sorkin, R. Patterson, M., Hardigan, P.C., Snyder, A., & Shallo-Hoffman, J. (2002). The effects of cranial manipulation on visual function. The 82nd Annual Meeting of the American Osteopathic Association Research Conference, San Diego, CA.
87. Shallo-Hoffman, J., Coulter, R.A., Oliver, P., Friedman, S., Hardigan, P.C., & Blavo, C. A. (2002, November). A comparison of visual acuity tests as a function of age and socio-ethnic group in a pre-school vision screening study. Bielschowsky Society for Strabismus Surgery. Heidelberg, Germany.
88. Hardigan, P.C. & Herzberg, G. (2002). Analysis of homelessness: results from a regional survey of homeless assistance clients. 32nd Annual Meeting of the Association for the Behavioral Sciences and Medical Education, Lake Tahoe, NV.
89. Herzberg, G., Waters, C., Ngamsnga, A., Lee, G., McKay, J., and Hardigan, P.C. (2002, May).

Building community: tales of collaboration in a homeless shelter. Presentation at the American Occupational Therapy Association Annual Conference, Miami, FL.

90. Skorobatchkyj, A, Sudol D., Burch, J., & Hardigan, P.C. (2002) Location of maxillomandibular asymmetries in patients with unilateral and bilateral posterior crossbites. Florida Society of Orthodontics., Tampa Bay, Florida.
91. Newman, D., Burch, J., & Hardigan, P.C. (2002). A comparative study of hand measured vs. computer measured orthodontic space analysis. Florida Society of Orthodontics., Tampa Bay, Florida.
92. Lacay, M., Hall, M., Birch, J., & Hardigan, P.C. (2002). Comparison of treatment outcomes with visual treatment objective (vto) predictions. Florida Society of Orthodontics., Tampa Bay, Florida.
93. Hardigan, P.C., Carvajal, M.J., & Birch, J.G. (2002). Towards developing a model of job satisfaction. Poster presented at the annual meeting of the American Pharmaceutical Association, Philadelphia, PA.
94. Hardigan, P.C., Madpak, A. (2002). Presenting a causal model of voluntary turnover. Poster presented at the annual meeting of the American Pharmaceutical Association, Philadelphia, PA.
95. Hardigan, P.C., Lai, L.L., Carvajal, M.J., & Lee, T. (2001) A comparison of job satisfaction among Taiwanese and U.S. Pharmacists. 61st International Pharmaceutical Federation (FIP), Singapore,
96. Hardigan, P.C., Lai, L.L., Carvajal, M.J., & Lee, T. (2001) modeling job satisfaction. 61st International Pharmaceutical Federation (FIP), Singapore,
97. Garlal, M., Kuttler, S., Dorn, S., & Hardigan, P.C. (2001). Root canal preparation using two nickel titanium rotary systems: A comparison of specific features related to quality and safety of instrumentation. International Society of Endodontics, Madrid, Spain.
98. Nix, I.B., Birch, J.G, Hardigan, P.C. (2001). Efficacy of the braun oral-b interdentalplaque remover in orthodontic patients. Florida Society of Orthodontics.,Tampa Bay, Florida.
99. Anderson, H.H., Hardigan, P.C., Garcia-Barreras, V. & Rey, J.C. (2001). The use of personality studies to predict interaction of students at a distance learning site in a traditional entry-level doctor of pharmacy degree program. Poster presented at the annual meeting of the American Association of Colleges of Pharmacy, Toronto, Canada.
100. J. Shallo-Hoffmann, R.A. Coulter, C. Blavo, Hardigan, P.C., L. Bejar (2001). A double-blind pre-school vision screening study: preliminary findings. European Neuro-Ophthalmological society, Tuebingen, Germany.
101. Hardigan, P.C., & Cohen, S.R. (2000). A content analysis of questions asked of 3rd year residents during sexual education programs. Association for the Behavioral Sciences and Medical Education, 29th Annual Meeting. October 12-15, 2000 / Santa Fe, NM.
102. Hardigan, P.C. (1998). The significance of academic merit, test scores and faculty interviews on

the admission process: A case study. Poster presented at the annual meeting of the American Association of Colleges of Pharmacy, Snowmass, CO.

103. Lai, L., Hardigan, P.C., & Carvajal, M.J. (1998). Teaching research design and statistics in a nontraditional PharmD program via ISDN interactive distance learning system. Poster presented at the annual meeting of the American Association of Colleges of Pharmacy, Snowmass, CO.
104. Hardigan, P.C. (1998). Linking job satisfaction and career choice with personality styles: An exploratory study of practicing pharmacists. Paper presented at the College of Health Sciences Poster Session, University of Wyoming, Laramie, WY.
105. Hardigan, P.C. (1998). Linking job satisfaction and career choice with personality styles: An exploratory study of practicing pharmacists. Paper presented at the American Pharmaceutical Association 145th Annual Meeting & Exposition, Miami Beach, FL.
106. Hardigan, P.C. & Carvajal, M.J (1998). Preferences and expectations of pharmacy students: Some inter-gender and inter-ethnic comparisons. Proceedings from the symposium for the eradication of social inequality: University of Wyoming, Laramie, WY.
107. Hsu, J., Ellington, T.M., Lai, L., Hardigan, P.C., & Robinson, M. (1997). Current use of high-dose aminoglycosides in hospitals throughout the United States. Paper presented at the American Society of Health-Systems Pharmacy, Atlanta, GA.
108. Hardigan, P.C., & Cohen, S.R. (1997). Use of the Myers-Briggs Type Indicator in medical education. Paper presented at the Association for the Behavioral Sciences and Medical Education, Brewster, MA.
109. Rodowskas, C.A., Hardigan, P.C., & Deziel-Evans, L. (1996). A proposal for curriculum revision. Poster presented at the annual meeting of the American Association of Colleges of Pharmacy, Reno, NV.
110. Hardigan, P.C., & Rittenburg, T.L. (1995). Pharmacists' perceptions of consumer behavior motivations. Paper presented at the Annual Retail Patronage and theory Conference, Baton Rouge, LA.

Non-Peer Reviewed Publications

1. Freedman G., Goldsep, F., Lynch, E.L., & **Hardigan P.C.,.** (2020). Tooth Whitening and Sealing: An Innovative Concept for the Retention of Destaining Results. Oral Health, July 24.
2. **Hardigan, P.C.** Construct Validity, Reliability and Cross-Cultural Equivalence of the LSP's Cognitive Dimension: A Rasch Analysis. (2004). (ERIC Document Reproduction Service No. ED 521596).
3. **Hardigan, P.C.** & Sisco, B.R. (2002). An analysis of learning styles among full-time undergraduate college students. (ERIC Document Reproduction Service No. ED 451811).
4. **Hardigan, P.C.** & Sisco, B.R. (2002). A factorial validity study of Learning StyleProfile. (ERIC Document Reproduction Service No. ED 449748).

BOOKS

1. Carvajal, MJ & Hardigan, PC. (2010). Economic and Social Determinants of Pharmacy Manpower. Nova Southeastern University Press.

TEACHING EXPERIENCE

Measurement

This course is designed to provide an introduction to concepts, theories, and methods regarding psychological testing and measurement. This course will focus on areas such as psychometric principles (e.g., validity and reliability), test and item analysis, test construction, and applications of psychological testing in a wide variety of settings (such as industry and education).

Research Design

Provides an intermediate level review of basic research methodology, concepts, and principles common in public health and epidemiological studies. Issues related to the design, development, and realization of public health studies, including sampling, surveying, data collection, and management as well as the interpretation and reporting of findings are discussed.

Epidemiology

This course is designed to introduce epidemiology, its methods and its role in public health. A major portion of the course will be devoted to an overview of fundamental epidemiologic methods used in public health research and practice. The student will be familiarized with basic measures used in describing disease frequency in populations. Descriptive and analytic approaches to the study of disease will be explored, and a perspective on the role of epidemiologic methods in health services planning and evaluation will be provided.

Biostatistics I

This is an introductory statistical course for marine biology/oceanographic science majors. The course will introduce elementary methods for presenting biological data in summary form, analyzing biological data, and designing experiments.

Biostatistics II

This is the second course in the biostatistics sequence and it is an intermediate course in the practical applications of inferential statistics with emphasis on advanced methods of analyzing biological data. It is aimed at preparing students for regression, linear models and generalized linear models at the graduate level. Topics include multiple regression, the general linear model (mixed ANOVA, factorial ANOVA, nested ANOVA, repeated measures ANOVA, and ANCOVA), and the generalized linear model (logistic and count models).

Pharmaceutical Marketing

This course is taught at the entry level and places emphasis on application of marketing theory and methods in the profession of pharmacy and the pharmaceutical industry. The aims of the course are to improve students' knowledge of the practice of marketing, to develop market research skills, and to formulate marketing plans and strategies.

Social and Behavioral Pharmacy

The goal of the course is to provide a foundation of communication skills with an emphasis on patient compliance. Additionally, this course will provide pharmacy students and other health professionals

with a general orientation to psychosocial concepts pertaining to human interaction, as well as an understanding of concepts and competencies requisite to successful communication, counseling and interviewing dyads.

Pharmacy Management

Pharmacy administration is a broad term denoting those administrative and behavioral sciences that focus on the planning, organizing, operationalizing and controlling of human and financial resources. As such, this course incorporates not only the more traditional business administration discipline labeled 'management,' but also draws heavily from the academic disciplines of accounting, economics, finance, marketing, operations, research, psychology, sociology and statistics

GRADUATE STUDENTS

Nova Southeastern University, 2000-present. Statistical advisor for post-graduate dental and medical research projects. This typically involves 15 students a year.

Byers, Beau [MS] (2025). Bolton Discrepancy Analysis: A Contrast of Artificial Intelligence using Chat GPT, Google Gemini, and Microsoft Copilot. Nova Southeastern University.

Hong, Mitchel [MS] (2025). Comparative analysis of various generative AI programs in orthodontic cephalometric diagnosis of maxillary and mandibular positions relative to cranial base. Nova Southeastern University.

Manda, Vivek [MS] (2024). Comparisons of resistance to sliding of different brackets within the same bracket system. Nova Southeastern University.

Hong, Bo-Young [MS] (2024). Periodontal microbiome viability tests with antimicrobial compounds. Nova Southeastern University.

Elshafei, Ahmad [PhD] (2023). Prediction Of Hospital Readmission Using The Core And The Core+ Scores In Participants With Chronic Obstructive Pulmonary Disease. Nova Southeastern University.

Touma, Rasha [MS] (2023). The Association between Neurocognitive Status and Oral Disease among Adult Patients Aged 18-64 Years Old: A University Clinical-Based Study. Nova Southeastern University.

Schubel, Aaron [MS] (2023). Long-Term Effects Of Water Immersion On Resistance To Sliding Of Aesthetically Coated Archwires. Nova Southeastern University.

Hirsch, Mandi [MS] (2023). 3D Analysis of Maxillary Impacted Canine Position and Prevalence in Various Skeletal Types: A Retrospective Study. Nova Southeastern University.

Amri, Youness [MS] (2022). Characteristics of NSU Special Needs Dental Clinic patients: A Case-control Study. Nova Southeastern University.

Amelia A. Lindsey [MS] (2021). Comparison Of Resistance To Sliding Of Gummetal® Wire To Stainless Steel At Active And Passive Bracket Angulations In Wet And Dry Conditions: An In Vitro Study. Nova Southeastern University.

Elyssa D. Barnett [MS] (2021). The Effect Of Different Mouth Rinses On Force Decay Of Orthodontic Elastomeric Chain: A Comparative In Vitro Study. Nova Southeastern University.

Ryan Fitzgerald [MS] (2019). Cephalometric Values of Citizens of the Chickasaw Nation. Nova Southeastern University.

Astin Barnes [MS] (2019). The Relationship Of Parent-Reported Symptoms Of Sleep-Disordered Breathing With The Presence Of Malocclusion And Craniofacial Disharmony In Pediatric Orthodontic Patients. Nova Southeastern University.

John Ritter [MS] (2019). Comparison of the frictional resistance of different wire dimensions in conventional and SPEED self-ligating orthodontic bracket system. Nova Southeastern University.

Mary Keegan [Ph.D.] (2014). The Effects Of High-Fidelity Simulation On The Self-Confidence And Clinical Competence Of Pre-Licensure Nursing Students In The Final Semesters Of An Associate Degree Nursing Program. Nova Southeastern University.

Theresa Robitaille [MS] (2014). A Long-Term Stony Coral Transplantation Success Offshore Southeast, Florida. Nova Southeastern University. Nova Southeastern University.

Christopher Grisset [MS] (2014). The effects of an extended power plant shutdown on the Florida manatee (*Trichechus manatus latirostris*). Nova Southeastern University.

Jessica Adams [MS] (2011-2013). Age A Growth Of Coastal Pelagic Tunas In The Florida Straits With Aging Via Otoliths. Nova Southeastern University. Nova Southeastern University.

Brielle Friedman. [MS] (2011-2013). Mass Cetacean Strandings In The United States- Comparison Of Northeast And Southeast Strandings,

Tracy Ortelli [Ph.D.] (2011 - 2013). Evaluating The Knowledge Of Those Who Teach: An Analysis Of Candidates' Performance On The Certified Nurse Educator (Cne) Examination. Nova Southeastern University.

Prathima Patel [MS] (2010-2012). Comparison of dental arch widths in adults with untreated malocclusions and normo occlusion. Nova Southeastern University.

Gina Cozzarelli [MS] (2010-2012). Determination of the Relationship Between Incisor Proclination and Arch Width Changes in Leveling the Curve of Spee. Nova Southeastern University.

Gina Rappucci [MS] (2009-2010). The effect of the tidal cycle on the Florida Manatee at the Port Everglades Power Plant. Nova Southeastern University.

Succar, J. [MS] (2008). Response rates and response rate patterns of online versus paper surveys for Practicing Dentists: A randomized trial. Nova Southeastern University.

Patterson, J. [Ph.D.] (2006). The Influence of Class Schedule Format on Student Achievement for Students of English as a Second Language at Utah Valley State College. University of Wyoming.

Urs Businger [MS] (2005). Contact Lens Induced Dry Eye and the Use of Homeopathic Eye Drops. Nova Southeastern University.

Cushion, N. [MS] (2005). Analysis of coral reef monitoring techniques in relation to marine reserve management objectives case study: Port Honduras Reserve. Nova Southeastern University.

Simmons, D. [Ph.D.] (2004). Valued occupations, community integration, and quality of life of the brain injury survivor: A path analysis. Nova Southeastern University.

Vince Miner, [Ph.D.] (2002). The Non-Environmental Aspects of Motivation of Adult Learners Seeking an Advanced Degree. University of Wyoming,

Randall Lambert, [MS] (1999). A feasibility study for taking a medical equipment company into Argentina. University of Wyoming,

Hsu Jane, [MS] (1997). The current use of high-dose aminoglycosides in hospitals throughout the United States. Nova Southeastern University.

Susan Casas de Betancourt, [MS] (1996). Impact of computer technology on drug information centers in the U.S., Canada. Nova Southeastern University.

ADJUNCT APPOINTMENTS

College of Education, University of Wyoming, Laramie Wyoming 2004-2008

SERVICE PRESENTATIONS

Hardigan, P.C. (2002-2019). Results from the survey of homeless needs. Broward County Coalition for the Homeless, Annual Planning Meeting.

Hardigan, P.C. (March, 1999). The relationship between job satisfaction and personality among practicing pharmacists. Meeting of the Health Sciences Consortium, University of Wyoming, Laramie, WY.

Hardigan, P.C. (July, 1998). Presenting research at professional meetings: The role of posters sessions. Topic presented to the directors, faculty and students of the McNair Scholarship Program, Laramie, WY.

Hardigan, P.C. (July, 1995). Learning-how-to-learn. Topic presented to the directors, faculty and students of the McNair Scholarship Program, Laramie, Wy.

WORKSHOPS

Hardigan, P.C. (2023-2024) Tableau for research and assessment. Child Services Council.

Hardigan, P.C. (2013). Creating and Evaluating Educational Tests. Health Professions Division, Nova Southeastern University.

Hardigan, P.C. (2012). Creating and Evaluating Educational Tests. Health Professions Division, Nova Southeastern University.

Hardigan, P.C. (2011). Creating and Evaluating Educational Tests. Health Professions Division, Nova Southeastern University.

Hardigan, P.C. (2010). Creating and Evaluating Educational Tests. Health Professions Division, Nova Southeastern University.

Hardigan, P.C. (2010). Classroom Assessment. College of Allied Health and Nursing, Nova Southeastern University.

Hardigan, P.C. (2005). Classroom Assessment. School of Pharmacy, University of Wyoming.

Hardigan, P.C. (2004). Item analysis for classroom teaching. Three presentations to the College of Dental Medicine.

Hardigan, P.C. (2003). Item analysis for classroom teaching. Two presentations to the College of Medicine.

Hardigan, P.C. (2003). Writing board questions. Two presentations to the College of Medicine.

Hardigan, P.C. (2002-2003). Research in your academic life. On-going presentations to all colleges in the Health Professions Division, Nova Southeastern University. Focus of the presentations is research and statistical analysis.

Hardigan, P.C. (2001). Assessment of student learning as part of educational improvement. Five presentations to all colleges in the Health Professions Division, Nova Southeastern University.

Hardigan, P.C. (2000). Pharmaceutical marketing. Presentation to the College of Pharmacy, Universidad Autonoma De Nuevo Leon.

Hardigan, P.C. (2000). Pharmaceutical marketing. Presentation to the Department of Health, Mexico City, Mexico.

Hardigan, P.C. (2000). Classroom assessment. Presentation to the College of Allied Health, Nova Southeastern University, Ft. Lauderdale, Florida.

Hardigan, P.C. (1999). Item analysis. Invited speaker to the 1999 Dental College of Dental Medicine continuing education program, Nova Southeastern University, Ft. Lauderdale, Fl.

Hardigan, P.C. (1999). Classroom assessment. Presentation to the College of Pharmacy, Nova Southeastern University, Ft. Lauderdale, Florida.

Hardigan, P.C. (1999). The application and use of lesson plans in higher education. Presentation to the College of Allied Health, Nova Southeastern University, Ft. Lauderdale, Florida.

CONTINUING EDUCATION PRESENTATIONS

Hardigan, P.C. Evaluating classroom tests. (2010). ADEA 87th Annual Session and Exhibition. Washington DC.

Hardigan, P.C. Creating Effective Classroom Tests. (2006). ADEA 83rd Annual Session and Exhibition. Orlando, Florida.

Hardigan, P.C. (2004). Creating educational tests. 105th Annual Meeting of the American Association of College of Pharmacy. Salt Lake City, Utah.

Hardigan, P.C. (2000). The relationship between Psychographics and Diabetes. Invited speaker to the 5th Annual Continuing Education Workshop, Ft. Lauderdale, FL.

Hardigan, P.C. (1999). Personality and thinking styles, their influence on pharmacotherapy. Invited speaker to the 4th Annual Continuing Education Workshop, Ft. Lauderdale, FL.

Hardigan, P.C. (1998). Personality assessment and pharmacy practice. Rocky Mountain DUR Meeting, Jackson, WY.

Hardigan, P.C. (1998). Myers-Briggs psychological evaluation: Developing your skills through self-awareness. Continuing education presentation at the Florida Society of Health-Systems Pharmacy Midyear Meeting. Nova Southeastern University, Fort Lauderdale, FL.

Hardigan, P.C. (1997). Personality assessment and pharmacy practice. Invited speaker to the 3rd Annual Continuing Education Workshop, Ft. Lauderdale, FL.

SERVICE

- Member of NSU IACUC, IRB, Radiation Safety and BSL Laboratory Safety Committees.
- Founder and Co-Chair Health Professions Education Research Symposium 2006-present.
- American Association for Behavioral Sciences and Medical Education Board Member, 2004-2008.
- American Association for Behavioral Sciences and Medical Education President, 2013-2015.
- Nova Southeastern University, Quality of life council, 2002-present.
- Nova Southeastern University, Research advisory council, 2002-present.
- Nova Southeastern University, College of Public Health, Assessment Committee, 1999-2019.
- Nova Southeastern University. university committee on faculty development, 2001-2019.
- Nova Southeastern University. university committee on sabbatical leave. 2000-2001.
- Nova Southeastern University, Health Professions Division, Chair, outcomes assessment committee, 1999 - present.
- Nova Southeastern University, Department of Pharmacy Administration, outcomes assessment committee, 1999 to 2002.
- Nova Southeastern University, College of Pharmacy, chair of promotions committee, 1999 to 2002.
- Nova Southeastern University, College of Pharmacy, university outcomes assessment committee, 1999 to 2002.
- University of Wyoming, School of Pharmacy, Committee on Admissions 1999 to 2002.

- University of Wyoming, School of Pharmacy, faculty representative to the American Association of Colleges of Pharmacy.
- University of Wyoming, School of Pharmacy, College of Health Sciences' faculty representative to the annual colloquium on teaching excellence, May, 1998.
- Mountain Folk School, Program Cochair. University of Wyoming, Summer 1993.

STATISTICAL ADVISOR

- The Internet Journal of Allied Health Sciences & Practice
- American Journal of Dentistry

CONSULTANT WORK

- Broward Regional Health Planning Council
- Broward Children Services Council
- Broward County School District
- Cleveland Clinic
- American Osteopathic Association
- Broward County Coalition for the Homeless
- Dayton Medical Group
- American Physical Therapy Association
- Eldercare Companies
- Agenta Biotechnologies, Inc.
- Gensco Labs, Inc.
- Gateway Institute for Brain Research
- CANO Health
- North Broward Hospital District
- Hospital Corporation of America
- Hit Check Corporation

SPECIAL SKILLS

- R data analysis for psychological, health care, and education research
- SPSS data analysis for psychological, health care, and education research
- STATA data analysis for psychological, health care, and education research
- JMP data analysis for psychological, health care, and education research
- Winsteps for psychological, health care, and education research
- MPlus data analysis for psychological, health care, and education research

PROFESSIONAL ORGANIZATIONS

- American Association of Colleges of Pharmacy
- American Association for the Advancement of Science
- Association of American Medical Colleges
- The American Statistical Association
- The American Educational Research Association

PROFESSIONAL REVIEWER

- American Journal of Pharmaceutical Education – Past Board Member
- The Internet Journal of Allied Health Sciences & Practice--Board Member

- Journal of Invitational Theory and Practice -- Past Board Member
- Annals of Behavioral Science and Medical Education -- Past Board Member
- American Educational Research Association
- Journal of the American Pharmaceutical Association
- American Society of Health-System Pharmacists
- American Public Health Association
- Journal of Managed Care Pharmacy
- Journal of Pharmaceutical Marketing and Management
- Journal of Pharmacy Teaching
- American Osteopathic Association
- Research in Social and Administrative Pharmacy
- AIDS Care
- Journal of Public Health Dentistry
- The American Educational Research Association
- Respiratory Care
- Centers for Disease Control