

The Mentors Who Made Me: My Journey to Become a Nurse Scientist

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Objectives

- Briefly discuss the timeline of events in my nursing career.
- Facilitators and barriers to advancing research/scholarship in Nursing.
- Recommendations to encourage engagement in nursing science.

Timeline of My Journey



School of
NURSING

Jul. 2016
NIDDK
CRIC
Workshop

Jul. 2017
Attended
NINR
Bootcamp



1995
Received
ADN

1997
Received
BSN

2005
Moved
to
Chicago

2011
Joined
ITNS

2012
Start
PhD
Program

Jun. 2017
Attended
NINR
SGI

Oct. 2018
Start
Microbiome
Pilot

Feb. 2020
Microbiome
Pilot
Complete

Training/Critical Care Nursing
(1993-2000)

Clinical Research Nurse
(2000-2016)

Academia/Nurse Scientist
(2016-Present)

1993
Entered
Nursing
Program

1996
passed
NCLEX

2000
Start
Clinical
Research
Nurse

2009
Entered
Online MSN
program

Jun. 2016
Successfully
Defended
Dissertation

Oct. 2016
Start
Academia

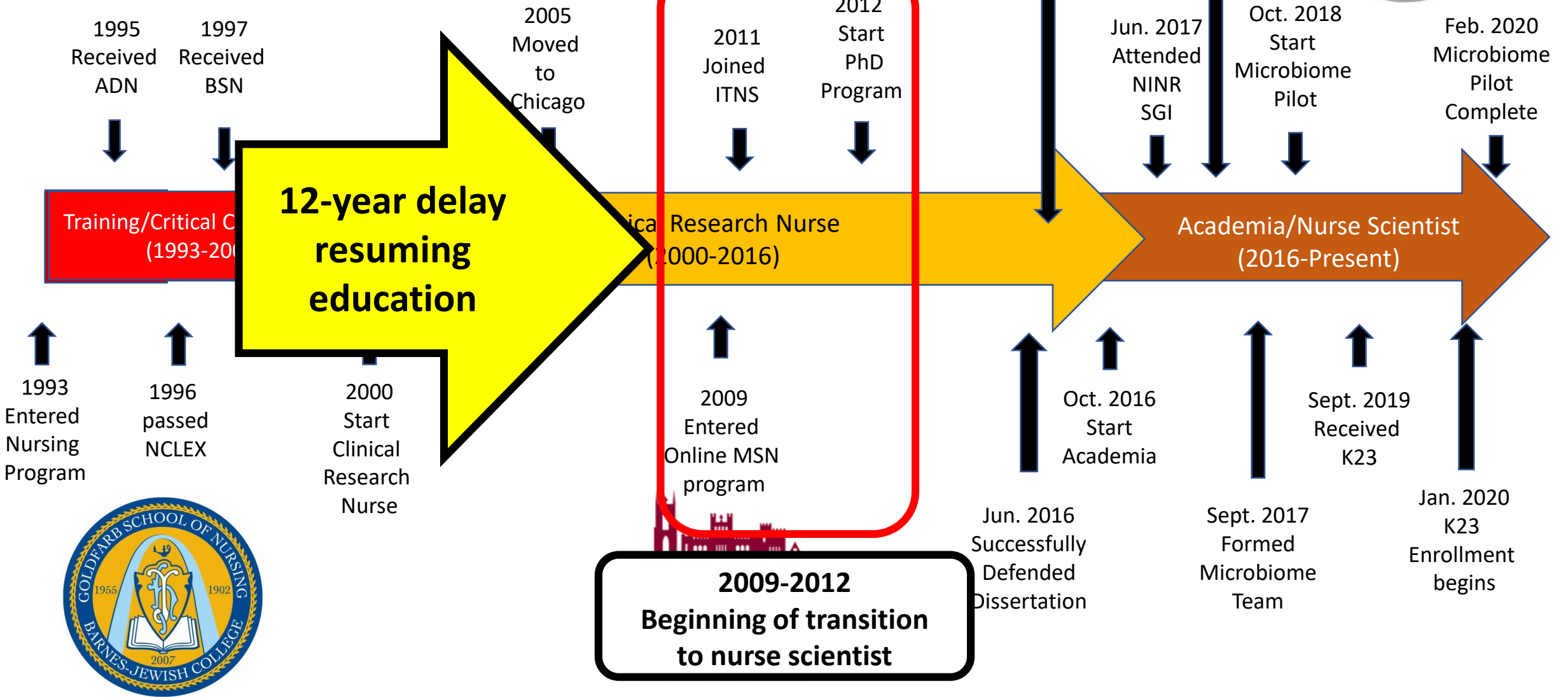
Sept. 2017
Formed
Microbiome
Team

Sept. 2019
Received
K23

Jan. 2020
K23
Enrollment
begins



Timeline of My Journey



Facilitators & Barriers
to my Journey to Become a
Nurse Scientist

Early career (training/critical care) (1993-2000)

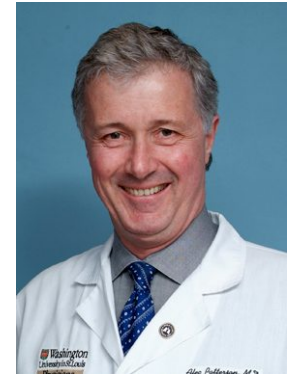
- Intensive clinical training program
- Many preceptors/few mentors
- First exposure to clinical research
- Lack of focus on nursing as a science
- No access to masters or doctorally prepared nurses



Joel Cooper, MD



Bryan Meyers, MD



Alexander Patterson, MD

Nurse Mentors

David Harris

Darla Lovasco

Tamara Benz

Patricia Villiocco



Photo source: https://www.stltoday.com/suburban-journals/progress-west-grows-in-first-year/article_84ca60d9-5568-5cec-8781-4f137e677e49.html

Mid career (Clinical Research Nurse)

(2000-2009)

- Beginning of research mentor/mentee relationships
- Began working exclusively with kidney transplant patients
- Became expert Certified Clinical Research Nurse (2006)
- Membership in first professional organization (ACRP)
- Little access to doctorally prepared nurses
- Lacking confidence/financial resources to pursue education



Denise Canfield, RN, CCRC



Daniel Brennan, MD

Transformational Period to Nurse Scientist

(2009-2016)

- Enrolled in online MSN program (100% tuition reimbursement-University of Chicago of Medicine)
- First access to Nurse Scientists (2009)
- Joined International Transplant Nurses Society
- Began actively seeking mentors
- Actively seeking leadership roles
- Started Ph.D. studies with Dr. Christopher Lee



(2009-2010)



International
Transplant Nurses
Society

(2011-present)



School of
NURSING

(2012-2016)



School of
NURSING



Christopher Lee,
PhD, FAHA, FAAN, etc.



Karen Lyons, PhD



Lissi Hansen, PhD, RN



International
Transplant Nurses
Society



Sandra Cupples,
PhD, RN, FAAN



Laura Taylor,
PhD, RN, FAAN



Linda Ohler,
MSN, RN, FAAN



Cynthia Russell,
PhD, RN, FAAN



Joyce Trompeta,
PhD, PNP, FAAN



Cyndi Lafond, PhD,
RN, CCRN-K



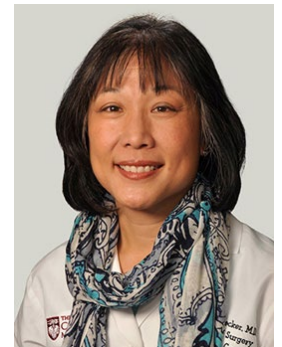
Milda Saunders,
MD, MPH



J.R. Thistlethwaite,
MD, PhD



Piotr Witkowski,
MD, PhD



Yolanda Becker, MD

Entry into Academia(Clinical Research Nurse)

(2016 to present)

- Financial investment to support my success
- Continue adding/listening to mentors
- Resources to building confidence, skills
- Time for training, professional development



Eileen Collins,
PhD, RN, FAAN



Carol Estwing Ferrans,
PhD, RN, FAAN



Karen Dunn-Lopez,
PhD, MPH, RN



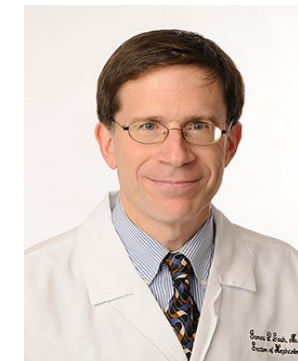
Holli DeVon
PhD, RN, FAAN



Cathy Ryan,
PhD, RN, FAAN



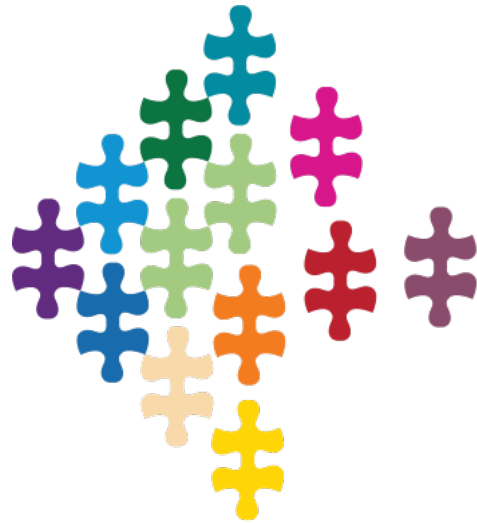
Stefan Green, PhD



James Lash, MD



Ulf Bronas,
PhD, FAHA



NATIONAL INSTITUTE OF
NURSING
RESEARCH

The NINR's Role in my Development

NINR Summer Genetics Institute

- Expanded my knowledge of genomics
- I left understanding the language of genomics
- Met colleagues/collaborators
- Provided training needed to establish my K23 team
- Led to additional microbiome related training



NINR Summer Genetics Institute
Class of 2017

K23 Research Team



Chang Park, PhD
Senior Biostatistician



Dr. Stefan Green, PhD
Microbiologist, Genomics Expert



Dr. Mark Maienschein-Cline, PhD



Dagmar Sweeny
Nucleic acid extraction,
Quantification and Quality Analysis



Holli DeVon PhD, RN, FAAN
Symptom Science



Dr. George Chlipala, PhD
Bioinformatics Specialists

Changes in Oral and Gut Microbiota and Incidence and Severity of Patient-Reported Symptoms in Pre- and Post-Kidney Transplant Patients

1K23NR018482-01A1, National Institute of Nursing Research (NINR)

Lockwood, M.B. (PI), Green, S. J. (Mentor)

Study Aims

Specific aim 1: Using a longitudinal design (pre-txp, 1 week post, 3 mo. post), we will quantify changes in alpha- and beta- diversity pre- and post-transplant and their relationship to symptom burden.

H₁: We will, after transplantation, see a decrease in alpha and beta diversities of oral and gut microbiomes related to transplantation processes (e.g., surgery, immunosuppression) as conditions select for specific organisms, resulting in higher levels of fatigue, sleep disturbance, and depression/anxiety-like symptoms.

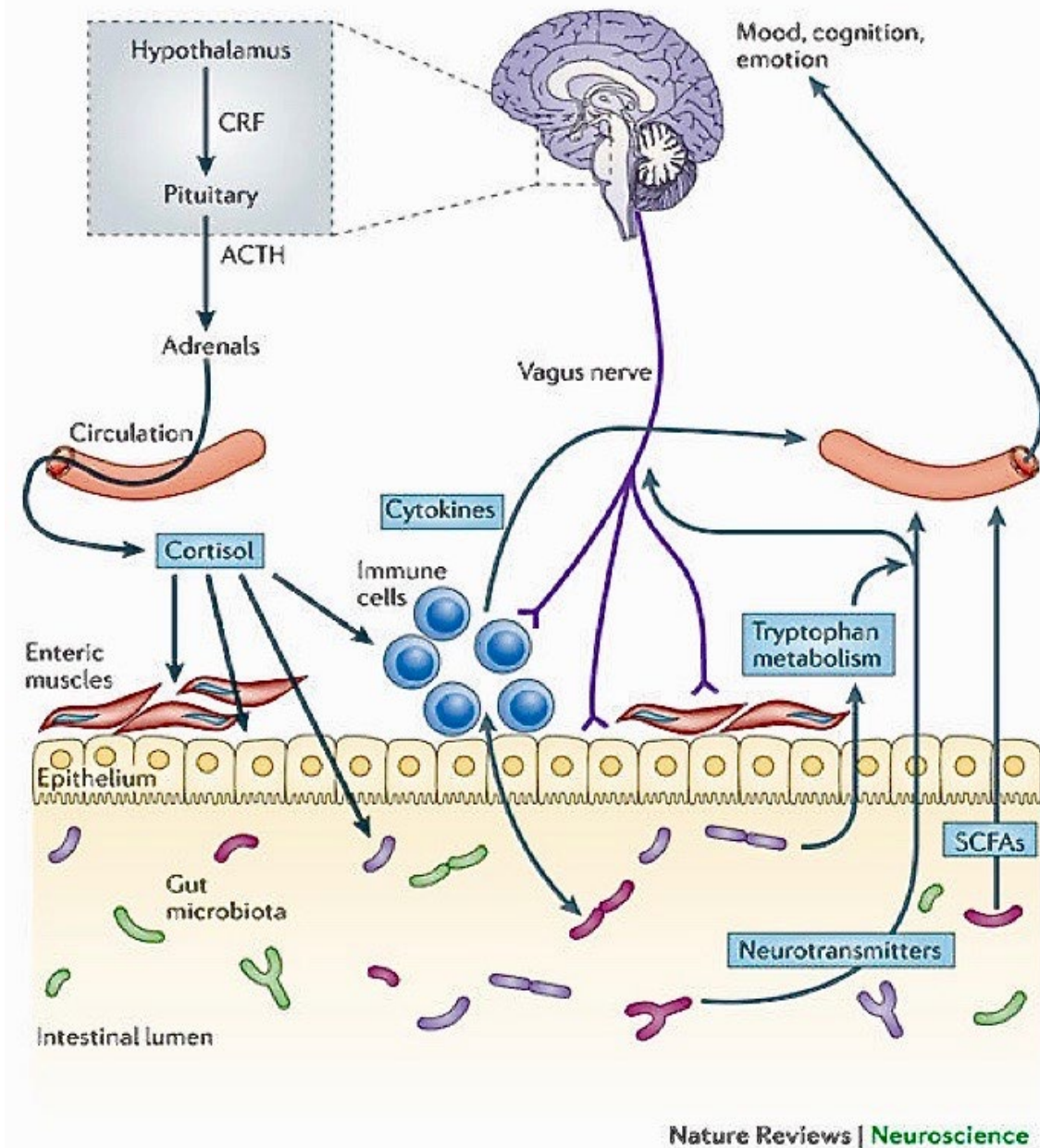
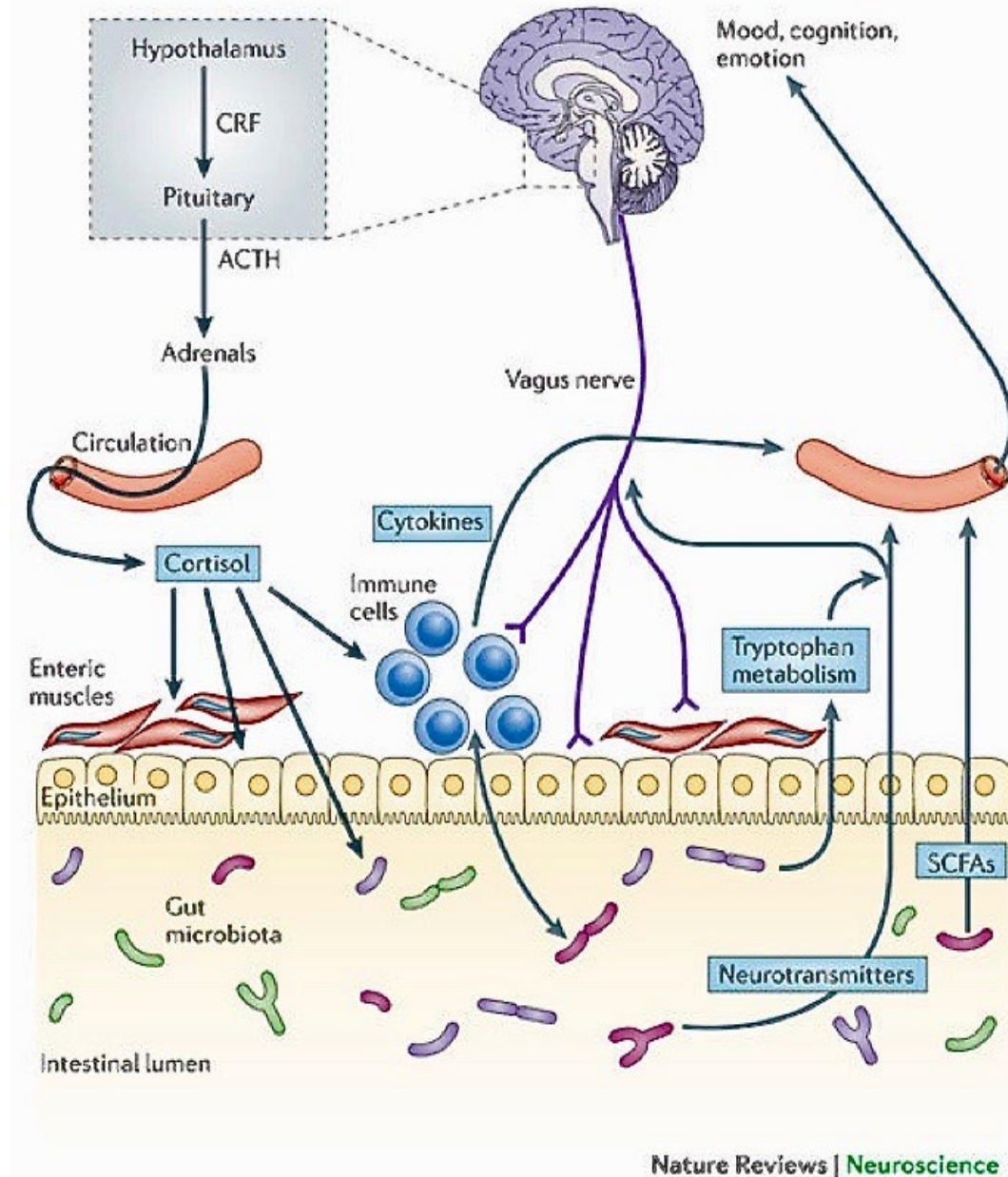


Figure credit: Cryan & Dinan 2012 *Nat Rev Neurosci*

Study Aims

Specific aim 2: Determine if microbial community structure and associated gene content of oral and gut microbiota at baseline are associated with patient outcomes (rejection, delayed graft function, infection, graft loss, and symptom phenotypes).

H₁: The relative abundance of specific taxonomic and functional gene components of baseline oral and fecal microbial communities (e.g. Proteobacteria, Faecalibacterium) will be negatively associated with post-transplant outcome measures (e.g., rejection, infection, symptom burden).



Potential Strategies to Strengthen the Pipeline of Nurses with Doctoral Degrees

- Reducing financial disincentives
- Increase early career nurses' exposure to nurse scientists
- Raising the profile of the nurse scientists

Funding by Institutes & Centers-2011-2019

IC	2011	2012	2013	2014	2015	2016	2017	2018	2019
NCI	\$10,222,781.00	\$10,221,861.00	\$10,222,434.00	\$10,278,793.00	\$10,318,286.00	\$10,259,594.00	\$10,749,896.00	\$10,313,477.00	\$10,299,594.00
NHLBI	\$9,751,758.00	\$9,133,731.00	\$7,020,065.00	\$8,914,480.00	\$12,621,385.00	\$11,979,305.00	\$11,983,716.00	\$11,968,037.00	\$12,047,284.00
NIAID	\$5,644,599.00	\$5,956,448.00	\$5,615,281.00	\$6,113,299.00	\$5,957,016.00	\$6,014,067.00	\$6,192,598.00	\$6,176,501.00	\$6,256,677.00
NIBIB	\$169,450.00	\$134,416.00	\$58,031.00	\$106,732.00	\$132,045.00	\$122,324.00	\$128,985.00	\$194,600.00	\$194,600.00
NICHD	\$5,540,294.00	\$6,094,473.00	\$5,932,049.00	\$5,701,410.00	\$5,770,157.00	\$6,020,727.00	\$5,433,497.00	\$5,307,083.00	\$5,302,554.00
NIDDK	\$4,006,389.00	\$3,997,605.00	\$3,991,986.00	\$3,997,498.00	\$3,999,839.00	\$3,991,849.00	\$3,996,949.00	\$5,006,251.00	\$4,997,216.00
NIMH	\$4,640,306.00	\$4,673,630.00	\$4,668,747.00	\$4,655,080.00	\$4,623,307.00	\$4,541,344.00	\$4,506,197.00	\$4,485,503.00	\$4,483,131.00
NIMHD	\$12,204,355.00	\$10,816,061.00	\$11,964,704.00	\$10,606,455.00	\$7,742,098.00	\$6,809,447.00	\$6,579,795.00	\$4,999,922.00	\$4,980,036.00
NINR	\$36,193.00	\$41,604.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$157,252.00	\$71,888.00

Source: <https://www.lrp.nih.gov/data-reports>

Mentoring for Early Career Nurses

- Increase undergraduate nurses' exposure to nursing scientists during training
- Formal mentoring programs for early career nurses
- Leverage the continuum from bedside to academia in nursing
- Develop strategies for EBP/QI to be part of nurses' regular duties

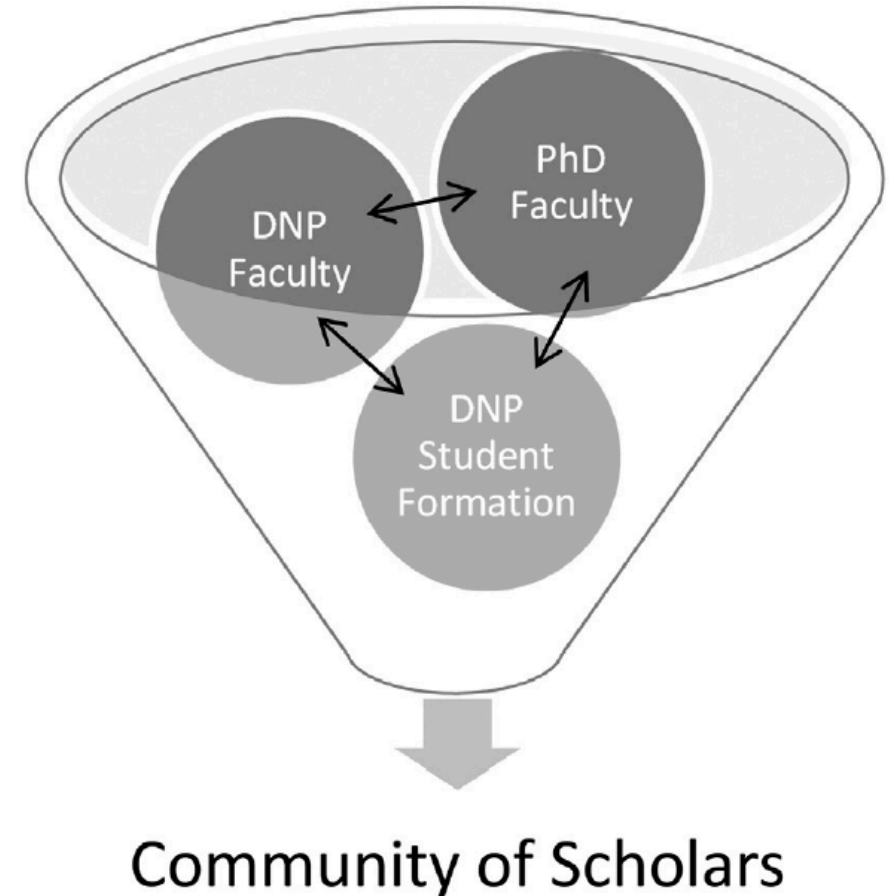


Fig. 1. Community of Scholars. This figure emphasizes how DNP and PhD-prepared faculty together guide DNP students' formation and fosters a community of scholars. It is through interaction between the DNP-PhD faculty team and the DNP student where intellectual curiosity is cultivated and encouraged. This dynamic interchange is central for promoting collaboration resulting in a community of scholars.

Raising the Profile of the Nurse Scientist

- Improve marketing to raise awareness in community and among colleagues.
- Leverage social media platforms to raise awareness.
- Who is our Neil De Grasse Tyson/Bill Nye?
- Nursing Science is exciting (and applicable to people's daily lives), we should let people know!

(photo source:<https://www.startalkradio.net/show/life-of-a-science-guy-with-bill-nye/>)



Conclusion

Critical Factors that Provided the Spark I Needed

- Financial support to pursue my Masters degree
- Having the autonomy/time to pursue my goals
- Exposure to clinical research/EBP & QI
- Joining professional nursing organizations
- Beginning to actively seek out mentors
- Willingness to adapt as opportunities arose



Potential barriers to early career nurses

- Lack of appreciation of nursing as a science
- Lack of exposure to PhD prepared nurses
- Lack of time/autonomy/support to pursue ongoing education
- Financial limitations related to tuition/professional organization membership
- Lack of appreciation of the power of the nurses' perspective!



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