

Robert T. Youker, PhD

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EDUCATION

- 2005 **Doctor of Philosophy in Cellular, Molecular, & Developmental Biology**
University of Pittsburgh, Pittsburgh, PA
Dissertation: *The Role of Molecular Chaperones in the ER-Associated Degradation of the Cystic Fibrosis Transmembrane Conductance Regulator in the Budding Yeast S. cerevisiae*
- 2001 **Master of Health Science in Reproductive Biology**
The Johns Hopkins University, Baltimore, MD
- 1998 **Bachelor of Science in Biochemistry**
Magna cum laude
Manhattan College, Riverdale, NY

CONTINUING-EDUCATION

- 2017 **Graduate Certificate in Optical Engineering** (UC Irvine-division of continuing edu.)
– 150 hours evaluated learning (15 quarter units)

PROFESSIONAL EXPERIENCE

- 2014-present **Assistant Professor of Molecular Biology, Department of Biology**
Western Carolina University, Cullowhee, NC
- 2012-2014 **Research Instructor, Renal Electrolyte Division, School of Medicine**
University of Pittsburgh, Pittsburgh, PA
- 2009-2011 **Postdoctoral Scholar, Renal Electrolyte Division, School of Medicine**
University of Pittsburgh, Pittsburgh, PA
- 2005-2009 **Postdoctoral Fellow, Vollum Institute**
Oregon Health Science University, Portland, OR

TEACHING, MENTORING, & PEDAGOGY EXPERIENCE

Teaching Experience (Lecture-Style Courses)
One course release per year (manage departmental research microscopes)

- 2014-present *Western Carolina University - Assistant Professor of Molecular Biology*
Cell & Molecular Biology (BIOL333)

Biophysics (BIOL423/523)
Principles of Biology Lab (BIOL140)
Cell & Molecular Biology Lab (BIOL333)
Research in Biology (BIOL480)
Research in Biology (BIOL493)
Microscopy Course (BIOL493/593)

2011 *University of Pittsburgh – Postdoctoral Scholar*
Guest Lecturer, Regulation of Membrane Traffic (MSCBMP 2840) Session VII
National Science Foundation Teaching Fellow GK-12 program

2001-2005 *University of Pittsburgh – Graduate Student*
National Science Foundation Teaching Fellow GK-12 Program
Student Teacher, HHMI Outreach - Biology Department
Teaching Assistant, Developmental Biology Lab
Guest Lecturer, Foundations of Biology Course
Teaching Assistant, Microbiology Lab

Research Mentoring Experience (Biology Department at WCU)

Fall 2017 Mariah Jones, Elizabeth Moore
“Mechanism of protein aggregation in cells”

Fall 2017 Sierra Rice, Cameron Garrett
“Investigation of LT10 inhibition of IDE enzyme”

Fall 2017 Connor Davis (co-mentored with Heather Coan)
“Keratin modulation of aggresome clearance & autophagy”

Spring 2017 Carly Burris
“Aggregation of fluorescent-tagged misfolded protein in human embryonic kidney cells”

Fall 2016 LaMoyne Ebert
“Creation and characterization of a fluorescently-tagged proteasome cell line for use in protein aggregation studies”

Fall 2016 Elissa Nelson
“In Vitro Investigation of the Interaction of LT10, a Peptide Found in Opossum Serum, with Insulin Degrading Enzyme”

Spring 2016 Jordan Nelson
“Characterization of spatial differences in two model misfolded protein during aggresome formation”

Jun-July 2016 Brittni Foster
“method development for native protein gel electrophoresis”

2015-2016 Robyn Gardner (undergraduate thesis)
“Comparison of Protein Aggregate Formation in HEK293 Cells in the Presence and Absence of Keratin”

*Advisor: Robert T. Youker
Committee: Heather Coan & Darby Harris*

- 2015 Juan Bautista
“Investigating the effects of oleuropein, an antioxidant found in olive leaves, on the formation of aggregates in cells”
- 2015-present Gabrienne Ivey (High School Student)
“Disruption of Covarying Network of Residues in NBD2 of CFTR by CF causing mutations”
- 2015 Yeng Vang
“Oleuropein effect on NBD1 Δ F508 aggregation”
- 2014-2015 Brandon Roark
“method development for two color number and brightness analysis”

Pre-Western Carolina University Student Mentoring

- 2014 Mr. Christopher Rabold, University of Pittsburgh
- 2003-2004 Kristen Ryan a recipient of an HHMI research project award

Professional Development and Pedagogy Training

- 2017 Summer Institute Teaching and Learning (WCU)
- 2012 7th LFD Workshop in Advanced Fluorescence Imaging and Dynamics (UC Irvine)
- 2010 Course in Scientific Management and Leadership (University of Pittsburgh Schools of the Health Sciences)

LEADERSHIP AND SERVICE

Service to Western Carolina University

Department of Biology

- 2016-2017 Tenure-Track Faculty Biology Search Committee
- 2017 Volunteer: Manned Biology Dept. Table at Open House (Mar.)
- 2016-present Graduate Committee
- 2016 Volunteer: Manned Biology Dept. Table at Open House (Feb.)
- 2015 External Program Review Document author (wrote standard 6)
- 2014-2015 Poster grading for BIOL333 lab (Dr. Harris - Fall & Dr. Rundle - Spring)

2015 Volunteer: Manned Biology Dept. Table at Open House (Feb. & Mar.)
Fall 2014 Biology Department Table at WCU Career Fair and Graduate School Days
2014-present Manager of Departmental Research Microscopes

Department of Chemistry & Physics

2016-2017 Tenure-Track Faculty Forensic Science Search Committee

College of Arts and Sciences

2016-2017 New Science Building Engagement Committee

Institution

2017 Moderator: Graduate Research Symposium – Biology Session
2017 Reviewer: Provost’s Internal Funding Grant Support
2016-2018 Academic Technology Advisory Committee
2015-2017 Co-Chair, Organizing Committee: Undergraduate Expo
2014-2015 Volunteer for Fall 2014 & Fall 2015 and Winter 2015 Welcome Team
2014-present President, WCU Sigma Xi Chapter

External Constituencies

2017-2020 Sigma Xi Committee on Qualifications and Membership
2017 External Reviewer: Oncotarget Journal
2016-2017 Volunteer: Science Olympiad – Microbe Mission (Smoky Mountain HS)
2017 Volunteer: NC Science Festival – Novozymes SciMatch (Scott Creek MS)
2016 Volunteer: NC Science Festival – Novozymes SciMatch (Bethel MS)
2016 Judge: Sigma Xi Student Research Conference (Atlanta, GA)
2016 “Miniature Microscope Demonstration”, Western Regional Science Fair
2015 ISGP / Sigma Xi Workshop – Communicating Science for Policy, Invited Debater (Durham, NC)
2015 Judge: Sigma Xi Student Showcase
2015-2017 Judge: Western Regional Science Fair

2014 Spoke to 2nd and 3rd graders at Heritage Christian Academy about selected science topics (Sept 19, 2014; Sept 26, 2014; Oct 15, 2014)

Service to Students

2017 Thesis Reader – Masters Student – Kacie Fraser
2017-present James Grissom undergraduate research thesis committee (Biology)
2014-2016 Guest Speaker in Dr. Rundle’s Introduction to Graduate Studies Course
2017-present Kenley Patanella graduate research thesis committee (Biology)
2016- Josh Boggs graduate research thesis committee (Biology)
2015-2016 Matthew Crowley graduate research thesis committee (Chemistry)

Pre-Western Carolina University Leadership/Service

2003-05 Co-President, Biological Sciences Graduate Student Organization

HONORS AND AWARDS

2017 Nominated: Student Nominated Faculty of the Year Award
2011 American Society for Cell Biology Postdoc. Travel Award
2007-2009 NRSA Fellowship, 5F32DK076343
2005-2006 NIDDK Training Fellowship
2004-2005 NSF GK-12 Fellowship
1998 Sigma Xi Medal, Manhattan College
1998 Biochemistry Medal, Manhattan College
1994-1998 Presidential Scholarship, Manhattan College

PROFESSIONAL MEMBERSHIPS

1997-present Sigma Xi Research Society
2003-2005, 2011-present American Society for Cell Biology
2012-present Biophysical Society
2013-2015 American Heart Association

PUBLICATIONS *(ROLE DESCRIBED FOR THOSE ACCEPTED OR WRITTEN AT WCU)

In preparation

*Ivey G and **Youker RT**. Disruption of Covarying Network of Residues in NBD2 of CFTR by Cystic Fibrosis causing mutations. (in preparation)

- Journal description: TBD
- Institution listed on manuscript: Western Carolina University
- Wet lab work: None because this is a computational/bioinformatics software article
- Data analysis: data analysis performed at Western Carolina University
- Manuscript writing, editing, and revisions: conducted at Western Carolina University
- Role in research and writing: I oversaw project development, experimental design, and manuscript writing. Miss Ivey performed the computational calculations, data analysis, and contributed to writing the manuscript.

Submitted

***Youker RT**. Detectors for Super-Resolution & Single-Molecule Fluorescence Microscopies. Invited & peer-reviewed Book Chapter in “Photon Counting”. Publisher: InTech (recommended for publication after minor revisions). Tentative publication date February 2018.

- Book description: Covers low-light detectors used in astronomy, physics, biology, and other low-light detection methods used in spectroscopy.
- Institution listed on manuscript: Western Carolina University
- Wet lab work: None
- Manuscript writing, editing, and revisions: conducted at Western Carolina University
- Role in research and writing: I wrote an in-depth literature review on the theory and application of low-light photodetectors used in super-resolution and single-molecule fluorescence microscopies.

Published

*Barlowe S, Coan HB, **Youker RT**. SubVis: an Interactive R package for exploring the effects of multiple substitution matrices on pairwise sequence alignment. PeerJ. (2017) 5:e3492.
doi:[10.7717/peerj.3492](https://doi.org/10.7717/peerj.3492)

- Journal description: PeerJ is an open-access and peer-reviewed scholarly publication that publishes articles in the biological and medical sciences.
- Institution listed on manuscript: Western Carolina University
- Wet lab work: None because this is a computational/bioinformatics software article
- Manuscript writing, editing, and revisions: conducted at Western Carolina University
- Role in research and writing: I provided expert knowledge in biological concepts related to protein structure and function. I also provided protein sequences he used to test his software. I assisted in editing and revising the manuscript written by Dr. Barlowe.

***Youker RT** and Teng H. Measuring Protein Dynamics in Live Cells: Protocols and Practical Considerations for Fluorescence Fluctuation Microscopy. *J. Biomed. Optics*. (2014) 19(9) 90801, 1-24. doi: [10.1117/1.JBO.19.9.090801](https://doi.org/10.1117/1.JBO.19.9.090801)

- Journal description: Journal of Biomedical Optics is a peer-reviewed journal that publishes papers focused on modern optical technology related to biomedical research and improved health care.
- Institution listed on manuscript: Western Carolina University & University of Pittsburgh
- Wet lab work: performed at University of Pittsburgh
- Manuscript writing, editing, and revisions: conducted at University of Pittsburgh & Western Carolina University
- Role in research and writing: As corresponding and first author, I designed and conducted the experiments and wrote the manuscript. Dr. Teng provided content expertise and assisted with editing, formatting, and figure creation.

Labilloy A, **Youker RT**, Bruns JR, Kukic I, Kiselyov K, Halfter W, Finegold D, Hadad do Monte SJ, Weisz OA. Altered Dynamics of a Lipid Raft Associated Protein in a Kidney Model of Fabry Disease. *Mol. Gen. Metab.* (2013), 111, 184-192. doi: [10.1016/j.ymgme.2013.10.010](https://doi.org/10.1016/j.ymgme.2013.10.010)

Youker RT, Bruns JR, Costa SA, Rbaibi Y, Lanni F, Kashlan OB, Teng H, and Weisz OA. Multiple motifs regulate apical sorting of p75 via a mechanism that involves dimerization and higher-order oligomerization. *Mol. Biol. Cell.* (2013), 24(12), 1996-2007. doi: [10.1091/mbc.E13-02-0078](https://doi.org/10.1091/mbc.E13-02-0078)

Mo D, Costa SA, Ihrke G, **Youker RT**, Pastor-Soler N, Hughey RP, and Weisz OA Sialylation of N-linked glycans mediates apical delivery of endolyn in MDCK cells via a galectin-9 dependent mechanism. *Mol. Biol. Cell.* (2012), 23(18), 3636-3646. doi: [10.1091/mbc.E12-04-0329](https://doi.org/10.1091/mbc.E12-04-0329)

Hutt DM, Martino Roth D, Chalfant M, **Youker RT**, Matteson J, Brodsky JL, Balch WE (2012) FKBP8 Peptidyl-Prolyl-isomerase activity manages a late stage of CFTR folding and stability. *J. Biol. Chem.* (2012), 287 (26), 21914-21925. doi: [10.1074/jbc.M112.339788](https://doi.org/10.1074/jbc.M112.339788)

Mattila PE, **Youker RT**, Mo D, Bruns JR, Cresawn KO, Hughey RP, Ihrke G, Weisz OA Multiple Biosynthetic Trafficking Routes for Apically Secreted Proteins in MDCK Cells. *Traffic* (2012), 13 (3) 433-442. doi: [10.1111/j.1600-0854.2011.01315.x](https://doi.org/10.1111/j.1600-0854.2011.01315.x)

Youker RT, Shinde U, Day R and Thomas G At the Crossroads of Homeostasis and Disease: Roles of the PACS proteins in Membrane Traffic and Apoptosis. *Biochem. J.* (2009), 421 (1) 1-15. doi: [10.1042/BJ20081016](https://doi.org/10.1042/BJ20081016)

Aslan JE, You H, Williamson DM, Endig J, **Youker RT**, Thomas L, Shu H, Du Y, Milewski RL, Brush MH, Possemato A, Sprott K, Fu H, Greis KD, Runckel DN, Vogel A, Thomas G Akt and 14-3-3 control a PACS-2 homeostatic switch that integrates membrane traffic with TRAIL-induced apoptosis. *Mol. Cell* (2009), 34 (4) 497-509. doi: [10.1016/j.molcel.2009.04.011](https://doi.org/10.1016/j.molcel.2009.04.011)

Atkins KM, Thomas L, **Youker RT**, Harriff MJ, Pissani F, You H, Thomas G HIV-1 Nef binds PACS-2 to Assemble a Multikinase Cascade that Triggers Major Histocompatibility Complex Class I (MHC-I) Down-regulation: Analysis using short interfering RNA and knock-out mice. *J. Biol. Chem.* (2008), 283 (17) 11772-11784. doi: [10.1074/jbc.M707572200](https://doi.org/10.1074/jbc.M707572200)

Zhang H, Schmidt BZ, Sun F, Condliffe SB, Butterworth MB, **Youker RT**, Brodsky JL, Aridor M, Frizzell RA Cysteine String Protein monitors late steps in Cystic Fibrosis Transmembrane Conductance Regulator Biogenesis. *J. Biol. Chem.* (2006), 281 (16) 11312-11321. doi: [10.1074/jbc.M512013200](https://doi.org/10.1074/jbc.M512013200)

Youker RT, Walsh P, Beilharz T, Lithgow T and Brodsky JL Distinct Roles for the Hsp40 and Hsp90 Molecular Chaperones during Cystic Fibrosis Transmembrane Conductance Regulator Degradation in Yeast. *Mol. Biol. Cell* (2004), 15 (11) 4787-4797. doi:[10.1091/mbc.E04-07-0584](https://doi.org/10.1091/mbc.E04-07-0584)

Sullivan ML, **Youker RT**, Watkins SC, Brodsky JL Localization of the BiP molecular chaperone with respect to endoplasmic reticulum foci containing the cystic fibrosis transmembrane conductance regulator in yeast. *J. Histochem. Cytochem.* (2003), 51 (4) 545-548. doi:[10.1177/002215540305100417](https://doi.org/10.1177/002215540305100417)

Akingbemi BT, **Youker RT**, Sottas CM, Ge R, Katz E, Klinefelter GR, Zirkin BR, Hardy MP Modulation of the rat Leydig cell steroidogenic function by di(2-ethylhexyl)phthalate. *Biol. Reprod.* (2001), 65 (4) 1252-1259. doi: [10.1095/biolreprod65.4.1252](https://doi.org/10.1095/biolreprod65.4.1252)

Trentacoste, SV, Friedmann AS, **Youker RT**, Breckenridge CB, Zirkin BR Atrazine effects on testosterone levels and androgen-dependent reproductive organs in peripubertal male rats. *J. Androl.* (2001), 22 (1) 142-148. doi: [10.1002/j.1939-4640.2001.tb02164](https://doi.org/10.1002/j.1939-4640.2001.tb02164)

Book Chapter

Youker RT and Brodsky JL (2007) Regulation of Hsp70 Function: Hsp40 Co-Chaperones and Nucleotide Exchange Factors in *Cell Stress Proteins*, Calderwood SK (ed), Springer Science Publishers, New York. 209-227. e-ISBN-13: 978-0-387-39717-7

PEER-REVIEWED CONFERENCE ABSTRACTS *(ROLE DESCRIBED ACCEPTED OR WRITTEN AT WCU)

*Davis C, Gardner R, **Youker RT**, Coan HB. Keratin affects cellular pathways associated with autophagy in human embryonic kidney cells. *NCTERMS*. Winston-Salem, NC, Nov. 2017 (submitted)
Role: I advised on aspects of research, analysis and presentation. (Collaboration with Dr. Coan)

*Gardner R, Davis C, Coan HB, **Youker RT**. Keratin affects aggresome formation in heat-shocked human embryonic kidney cells. *Bluegrass Molecular Biophysics Symposium*. Lexington, KY, May 2017
Role: I advised on aspects of research, analysis and presentation. (Collaboration with Dr. Coan)

*Ebert L, **Youker RT**. Creation and characterization of a fluorescently-tagged proteasome cell line for use in protein aggregation studies. *Sigma Xi Annual Meeting and Student Research Conference*. Atlanta, GA, Nov. 2016
Role: Funded project and advised on aspects of research, analysis and presentation.

*Nelson J, **Youker RT**. Distinct spatial organization for two misfolded proteins during aggresome biogenesis in HEK293 cells. *Sigma Xi Annual Meeting and Student Research Conference*. Atlanta, GA, Nov. 2016
Role: Funded project and advised on aspects of research, analysis and presentation.

*Ivey G, **Youker RT**. Statistical coupling analysis reveals alterations of amino acid interactions in Cystic Fibrosis disease causing mutations located in the NBD2 domain of CFTR. *Sigma Xi Annual Meeting and Student Research Conference*. Atlanta, GA, Nov. 2016

Role: Funded project and advised on aspects of research, analysis and presentation.

*De Silva CR, Lee J, Dragan N, Martin G, **Youker RT**. Synthesis, characterization, and in vivo cellular imaging of Eu(III)-doped zinc oxide nanoparticles. *68th Southeastern Regional Meeting of the American Chemical Society*. Columbia, SC, Oct. 2016

Role: I conducted cell imaging in support of research and advised on analysis and presentation.

(Collaboration with Dr. De Silva)

***Youker RT**, Wyderko JA, Rabold C, Brodsky JL, Weisz OA. Dynamics of CFTR aggregation are altered upon proteasome inhibition as measured by N&B analysis. *Bluegrass Biophysics Symposium*. Lexington, KY, May 2015

Role: Funded project and advised on aspects of research, analysis and presentation.

*Vang Y, Bautista J, Roark B, Nelson E, Wyderko J, **Youker RT**. Investigation of the effects of Oleuropein, an antioxidant found in olive leaves, on the biosynthetic folding of the NBD1 domain of CFTR. *Molecules in the Mountains Conference*. Cullowhee, NC, March 2015

Role: Funded project and advised on aspects of research, analysis and presentation.

***Youker RT**, Rabold C, Brodsky JL, Weisz OA. Dynamics of CFTR aggregation are altered upon proteasome inhibition as measured by N&B analysis. *Molecular Biophysics Symposium*. Blacksburg, VA, Nov. 2014

Role: Funded project and advised on aspects of research, analysis and presentation.

Labilloy A, **Youker RT**, Bruns JR, Kukic I, Kiselyov K, Halfter W, Finegold D, Weisz OA. Dynamics of a raft associated protein in a live cell model of Fabry disease. *Gordon Research Conference in Lysosomal Diseases*, Lucca, Italy, April 2013

Youker RT, Lanni F, Teng H and Weisz OA. Dissecting the roles of O-glycosylation and dimerization in the apical sorting of a model raft independent protein. *ASBMB special symposia: Biochemistry of Membrane Traffic*, Tahoe City, CA, October 2010

UNDERGRADUATE STUDENT CONFERENCE MENTORED ABSTRACTS *(ROLE DESCRIBED ACCEPTED OR WRITTEN AT WCU)

*Ebert L, **Youker RT**. Creation and characterization of a fluorescently-tagged proteasome cell line for use in protein aggregation studies. *WCU Undergraduate Expo*, Cullowhee, NC, March 2017

Role: Sponsor who oversaw aspects of research, analysis, and presentation

*Nelson J, **Youker RT**. Distinct spatial organization for two misfolded proteins during aggresome biogenesis in HEK293 cells. *WCU Undergraduate Expo*, Cullowhee, NC, March 2017

Role: Sponsor who oversaw aspects of research, analysis, and presentation

*Vang Y, Bautista J, Roark B, Nelson E, Wyderko J, **Youker RT**. Investigation of the effects of Oleuropein, an antioxidant found in olive leaves, on the biosynthetic folding of the NBD1 domain of CFTR. *WCU Undergraduate Expo*, Cullowhee, NC, March 2015
Role: Sponsor who oversaw aspects of research, analysis, and presentation

INVITED PRESENTATIONS

- 2014 Invited Short Talk, Ninth International Weber Symposium on Innovative Fluorescence Methodologies in Biochemistry and Medicine
Short Talk: Proteasome inhibition alters dynamics of CFTR aggregation measured by N&B analysis
- 2012 Fellow Presentation, Eleventh Annual Pittsburgh Symposium on Membrane Traffic
- 2011 Guest lecturer, graduate course, animal models of disease, Nankai University, Tianjin, China
- 2010 Guest lecturer, Biology Seminar Series, Slippery Rock University
Biology Seminar Series: Maintaining cell polarity - Which way to the apical membrane?

RESEARCH & OTHER SUPPORT

In Progress

NC Biotech funding for Molecules in the Mountains Conference
Role: **Committee Member**
Total Funds: \$3,000

In Preparation

- Submit Oct. 27th National Institutes of Health AREA Grant Submission
Role: **Co-Principle Investigator (co-PI)**
PI: Dr. Heather Coan
- Submit Oct. 3rd American Heart Association AIREA Grant Submission
Title: *“Effect of Keratin on Autophagy Regulation in Mesenchymal Stem Cells”*
Role: **Co-Principle Investigator (co-PI)**
PI: Dr. Heather Coan

Submitted

- Sept. 29, 2017 School University Teacher Education Partnership (SUTEP) Grant
“Enhancing Community Engagement and School-University Partnership to promote K-12 extracurricular STEM programs”
Yang W, Crawford R, Clapp A, Bricker PL, Yan Y, Mathews JW Pechmann JH, Mathews KG, **Youker RT**, Huffman SW, Gomez EA, Butcher KL, Penland AD.
Role: **Participant**

Completed

- 2016 – 2017 School University Teacher Education Partnership (SUTEP) Grant
Title: “*Enriching Science Education: School-University Partnership to promote K-12 Science Education through mentoring for STEM competitions. Sponsored by College of Education and Allied Professions, Western Carolina University*”
Yang W, Crawford R, Clapp A, Bricker PL, Yan Y, Mathews JW, Pechmann JH, Mathews KG, **Youker RT**, Huffman SW, Gomez EA, Butcher KL, Penland AD.
Role: **Participant**
Total Amount: \$4,000
- 2017 Sigma Xi – Chapter Funds Request
Title: Funds to support invited Undergraduate Expo Speaker
Total Amount: \$650
Role: wrote and submitted application
- 2016 Sigma Xi – Chapter Funds Request
Title: Funds to support invited Undergraduate Expo Speaker
Total Amount: \$500
Role: wrote and submitted application
- 2015 Sigma Xi – Chapter Funds Request
Title: Funds to support invited Undergraduate Expo Speaker
Total Amount: \$1000
Role: wrote and submitted application
- 2015 WCU CAS Faculty Research Grant
Title: “*Development of a two-color Number and Brightness (N&B) Imaging Assay*”
Role: **Principle Investigator (PI)**
Total Amount: \$1,000
- 2015 – 2016 Institutional Development Grant – North Carolina Biotechnology Center
Title: “*Acquisition of a Malvern Zetasizer Nano ZS for the facilitation of Multi-Disciplinary Biotechnology Research at WCU*”
Evanoff DD, Bintz BJ, Bose I, De Silva CR, Wallen J, **Youker RT**.
Role: **Co-Principle Investigator (co-PI)**
Total Amount: \$47,750
- 2012 – 2016 AHA NCRP Scientist Development Grant
Project number: 12SDG8960000
Title: “*Apical Sorting Mechanisms in Renal Epithelial Cells*”
Role: **Principle Investigator (PI)**
Total Amount: \$308,000

2006 – 2009 NRSA Fellowship
Project number: 5F32DK076343-1A1
Title: “*Regulation of Polycystin-2 Trafficking*”
Role: **Principle Investigator (PI)**
Total Amount: \$96,472

2005 – 2006 NIDDK Institutional Training Grant
Project number: 2T32DK007680-21
Title: “*Multidisciplinary Training in Neuroendocrinology*”
Role: **Trainee**
Total Amount: \$420,547

2004 – 2005 NSF GK-12 Fellowship
Award number: 0338135
Title: “*The Pittsburgh Partnership for ENERGIZing Science in Urban Schools*”
Role: **Fellow**
Total Amount: \$2,030,009

Grants (Submitted but not funded)

2017 NSF – Improving Undergraduate STEM Education (IUSE)
Submitted by Institute on Science for Global Policy (ISGP)
Title: “Strengthening STEM education in the 21st Century”
Role: **Campus coordinator – participant school** (11 institutions of higher
education are partnering with ISGP)

2016 WCU Provost Grant
Title: “*Image Processing Techniques for Improved Protein
Aggregate Characterization in Cells*”
Role: **Co-Principle Investigator** (w/ Dr. Peter Tay – Kimmel School)
Total Amount: \$15,000

2015 NSF CAREER Grant
Title: “*Dynamics of Aggresome Biogenesis*”
Role: **Principle Investigator**
Total Amount: \$529,376