Graduate School of Biomedical Sciences

Spring 2020 Commencement Program
Commencement Program
Our Mission

The mission of The University of Texas Health Science Center at San Antonio is to make lives better through excellence in education, research, health care and community engagement.

Strategies for achieving this mission are:

- Educating a diverse student body to become excellent health care providers and scientists.
- Engaging in research to understand health and disease.
- Commercializing discoveries, as appropriate, to benefit the public.
- Providing compassionate and culturally proficient health care.
- Engaging our community to improve health.
- Influencing thoughtful advances in health policy.

Our Purpose

The purpose of The University of Texas Health Science Center at San Antonio is to provide the best in health careers education, biomedical research, patient care and community service to San Antonio and the South Texas/Border Region. Through undergraduate, graduate and postgraduate programs, the faculty is committed to educating health professionals who will provide excellent patient care and research that can be applied to treat and prevent disease.

Graduate School of Biomedical Sciences Mission

The Graduate School of Biomedical Sciences provides an individualized, diverse and multidisciplinary learning environment for students to develop the knowledge, skills and creativity necessary to succeed in the evolving biomedical disciplines.
The Order of Exercises *

Processional
The audience is asked to remain seated for the procession. Additionally, guests are requested to please silence all cell phones for the duration of the ceremony.

Academic Procession
Nicquet Blake, Ph.D.
Senior Associate Dean
Graduate School of Biomedical Sciences

Presiding
David S. Weiss, Ph.D.
Dean
Graduate School of Biomedical Sciences

Greetings
William L. Henrich, M.D., MACP
President
The University of Texas Health Science Center at San Antonio

Graduate Student Address
Jodie Paige Gray
Radiological Sciences Program
Class of 2020

Presentation of Candidates for Degrees
Timothy D. Raabe, Ph.D.
Associate Dean
Graduate School of Biomedical Sciences

Conferring of Degrees
William L. Henrich, M.D., MACP
President
The University of Texas Health Science Center at San Antonio

Recessional
As a courtesy to the graduating class, guests are requested to please refrain from leaving until after the recessional.

Reception
The University of Texas Health Science Center at San Antonio
Long Campus Holly Auditorium Foyer

*Anticipated Order of Exercises prior to the COVID-19 pandemic.
Honor Cords

Red, white and blue cords identify Veterans of the United States Armed Forces and active duty military personnel. The cords are provided in appreciation of their service to our nation and defense of the freedoms we enjoy.

Blue and green cords identify M.D./Ph.D. students. The cords are provided to highlight the dual degree status of physician-scientists as they pursue both doctoral (blue) and medical (green) degrees.
The University of Texas
Health Science Center at San Antonio
Graduate School of Biomedical Sciences

David S. Weiss, Ph.D.
Dean

Nicquet Blake, Ph.D.
Senior Associate Dean for Admissions and Student Affairs

Timothy D. Raabe, Ph.D.
Associate Dean for Academic Affairs

José E. Cavazos, M.D., Ph.D.
Assistant Dean for the M.D./Ph.D. Program

Graduate Programs in Biomedical Sciences

Doctoral Programs

Cellular and Structural Biology
Babatunde Oyajobi, Ph.D.
Chair of Committee on Graduate Studies

Christi A. Walter, Ph.D.
Department Chair and Program Director

Integrated Biomedical Sciences
Renee Yew, Ph.D.
Chair of Committee on Graduate Studies

Keith Krollick, Ph.D.
Program Director

Microbiology and Immunology
Keith Krollick, Ph.D.
Chair of Committee on Graduate Studies

Michael Berton, Ph.D.
Interim Department Chair and Program Director

Pharmacology
Yui-Wing Francis Lam, Ph.D.
Chair of Committee on Graduate Studies

Alan Frazer, Ph.D.
Department Chair and Program Director
Radiological Sciences
Jessica Nute, Ph.D.
Chair of Committee on Graduate Studies

Andrew Sampson, Ph.D.
Program Director

Translational Science
Christopher R. Frei, Pharm.D.
Chair of Committee on Graduate Studies and Program Director

Doctorate in Medical Physics
Neil Kirby, Ph.D.
Chair of Committee on Graduate Studies

Niko Papanikolaou, Ph.D.
Program Director

Master of Science Programs

Cell Systems and Anatomy
Ramaswamy Sharma, Ph.D.
Chair of Committee on Graduate Studies

Christi A. Walter, Ph.D.
Department Chair and Program Director

Clinical Investigation and Translational Science
Helen Hazuda, Ph.D.
Interim Chair of Committee on Graduate Studies and Program Director

Immunology and Infection
Peter Dube, Ph.D.
Chair of Committee on Graduate Studies and Program Director

Medical Health Physics
Jessica Nute, Ph.D.
Chair of Committee on Graduate Studies

Andrew Sampson, Ph.D.
Program Director

Personalized Molecular Medicine
Renee Yew, Ph.D.
Chair of Committee on Graduate Studies and Program Director

Z. Dave Sharp, Ph.D.
Co-Program Director
Graduate Program in Nursing Science

Eileen T. Breslin, Ph.D., R.N., FAAN
Dean
School of Nursing

Heidi Worabo, D.N.P., RN, FNP-B.C.
Chair of Committee on Graduate Studies

Sara L. Gill, Ph.D., RN, IBCLC, FAAN
Associate Dean for Graduate Studies

Graduate Programs in Dentistry

Master of Science Programs

Peter M. Loomer, B.Sc., D.D.S., Ph.D., MRCD(C), FACD
Dean
School of Dentistry

Dental Hygiene
Melanie Taverna, M.S., RDH
Chair of Committee on Graduate Studies and Program Director

Dental Science
Suman Challa, B.D.S., M.S.
Chair of Committee on Graduate Studies and Program Director

Advanced Education in General Dentistry Track
Luis Yepes, D.D.S.
Track Leader

Endodontics Track
Nikita Ruparel, D.D.S., M.S., Ph.D.
Track Leader

Oral and Maxillofacial Radiology Track
Hassem Geha, D.D.S., M.D.S.
Track Leader

Orthodontics Track
Ravikumar Anthony, D.D.S., M.S.
Track Leader

Pediatric Dentistry Track
Maria-Jose Cervantes, D.D.S., M.S.
Track Leader

Periodontics Track
Brian Mealey, D.D.S., M.S.
Track Leader
**Prosthodontics Track**  
E. Matthew Lamb, D.D.S.  
Track Leader

**Joint Program in Biomedical Engineering with The University of Texas at San Antonio**

Eric Brey, Ph.D.  
Program Director  
Chair, Department of Biomedical Engineering  
The University of Texas at San Antonio

Jean Jiang, Ph.D.  
Associate Program Director  
Chair of Committee on Graduate Studies  
The University of Texas Health Science Center at San Antonio

**Joint Program in Translational Science with The University of Texas at San Antonio, The University of Texas at Austin and The University of Texas Health Science Center at Houston School of Public Health**

Christopher R. Frei, Pharm.D.  
Chair of Committee on Graduate Studies and Program Director

**Joint Program in Pharmacy with The University of Texas at Austin**

M. Lynn Crismon, Pharm.D.  
Dean, College of Pharmacy  
The University of Texas at Austin

**Graduate Certificate Programs**

**Cancer Prevention**  
Michael Wargovich, Ph.D.  
Program Director

**Translational Science**  
Linda McManus, Ph.D.  
Program Director
Doctor of Philosophy
Degree Conferred on August 23, 2019

Iriscilla Imabary Ayala
Cellular & Structural Biology
The Role of the Diabetes Gene and WNT Pathway Effector TCF7L2 in Hepatic Metabolic Zonation

Kristen Rogers Canady
Microbiology & Immunology
Novel Approaches to Uncover Host Genetic Correlates of HIV Disease Progression

Paul Anthony Martinez
Pharmacology
Biogenic Aldehydes as Therapeutic Targets in Parkinson’s Disease

Brian Joseph Stoveken
Cellular & Structural Biology
Engineering and Characterization of Photoconvertible Fluorescent Proteins for Quantitative Localization in Microscopy

Erin Hannah Sybouts
Cellular & Structural Biology
Identification of Critical Factors for Replication Fork Stability in Cancer

Master of Science
Degrees Conferred on August 23, 2019

Murad Awadh Alrashdi
Dental Science
Effect of Oral Health Campaign on Children of Refugees Families

Cristina Maria Leon-Pineda
Dental Science
Inhibition of Demineralization at Restoration Margins of Z100 and Tetric Evoceram Bulk Fill in Dentin and Enamel
Doctor of Philosophy
Degrees Conferred on December 20, 2019

Jacob Tyler Boyd
Integrated Biomedical Science
High Omega-6 Diet Produces Chronic Peripheral Neuropathy that is Rescued by Altering Membrane Lipid Content or Activity

Shahida Karina Flores
Integrated Biomedical Science
Functional Characterization of Tumor-Associated Germline TMEM127 Variants

Liezl Edralin Francisco
Biochemistry
Discovery of Small-Molecule Inhibitors of Excision Repair Cross-Complementation Group 1 and Three Prime Exonuclease 2

Meghan Allyse Guzman
Integrated Biomedical Science
Insights into the Molecular Mechanisms and Development of Novel Therapeutics to Treat Human Schistosomiasis

Sijia He
Integrated Biomedical Science
The Role of Secretory Factor Leucine-Rich Alpha-2-Glycoprotein 1 in Obesity-Induced Hepatic Steatosis and Insulin Resistance

Sabrina Patrice Martinez
Microbiology & Immunology
Characterization of Novel Inhibitor of Candida Albicans Filamentation Produced by Candida Glabrata

Mary Lee A. Potter
Nursing Science
Unfinished Nursing Care: A Mixed-Methods Study
Master of Science
Degrees Conferred on December 20, 2019

Michelle DeMoss
Dental Hygiene
*Dental Hygienists’ Role in the Opioid Syndemic: Assessing Attitudes and Perceptions*

Erika LaShay Demel
Integrated Biomedical Science
*The Effect of Transforming Growth Factor Beta on Antigen-Specific CD8+ T Cell Response in the Colon*

Vinutha Ganapathy
Clinical Investigation/Translational Science
*The Healthy Aging Index and its Association with Morality in Older Mexican and European Americans*

Li Liu
Integrated Biomedical Sciences
*Impact of Ethanol Consumption in the Heart Subjected to Ischemia and Reperfusion Injury: The Role Mitofilin Plays*

Humberto Guadalupe Villarreal
Clinical Investigation/Translational Science
*Transitional Care of Service Members with Genitourinary Injury*

Travis Chad Williams
Immunology and Infection
*TGM3 Overexpression and its Effect on Cancer Development*

Doctor of Philosophy
Degree Conferred on February 28, 2020

Marisol Arizmendi Breton-Leija
Nursing Science
*El Valor De La Amabilidad: Experiences of Predominantly Spanish-Speaking Woman with Prenatal Care and Giving Birth in the United States, A Latinidad Ethnographic Research*
Ngonidzashe Benson Madungwe  
Biomedical Engineering  
*Insights into Mitochondrial Function in Cardiac Ischemia-Reperfusion Injury*

Ashley Lauren Silvia  
Integrated Biomedical Science  
*Post-Transcriptional Regulation of Ebola Virus Encoded Proteins*

Xue Yin  
Integrated Biomedical Science  
*Role of YAP/TAZ in the Initiation of Human Pancreatic Ductal Adenocarcinoma*

**Candidates for the Doctorate of Medical Physics**  
May 15, 2020

Anna Laura Licón  
*An Open Source Tool to Visualize Potential Cone Collisions while Planning SRS Cases*

James Alan McCulloch  
*Electron Cutout Factor Variation Across Centers with Matched Linear Accelerators*

Daniel Jeffrey Nicewonger  
*HDR Applicator Commissioning Using Linear Accelerator On-Board Imaging*

Alex Liang Zhao  
*Implementation of an Automated Digital Radiography Quality Control Program*
Candidates for the
Doctor of Philosophy
May 15, 2020

Nema Bassiri-Gharb
Radiological Sciences
Dosimetric Effects of Inhomogeneous Media for Sub-MeV Photon Radiotherapy

Shawn Ryan Gray
Biomedical Engineering
Astrocytes Sense the Integration of Sensory Input with Arousal by Noradrenergic Terminals

Jodie Paige Gray
Radiological Sciences
Structural and Functional Alternations in Major Depressive Disorder: A Multi-Model Meta-Analytic Approach to Network Modeling

Frank Herkules
Integrated Biomedical Sciences
N-Terminal Auto-Ubiquitylation of the TRIM5α Antiviral Factor is Controlled by the Proximity of Three Ring Domains Present in the Hexagonal TRIM5α Assemblies Formed Atop Retroviral Capsids

Shih-Bo Huang
Integrated Biomedical Sciences
SIRT1, A Double-Edged Sword During Prostate Pathogenesis

Brian Sean Iskra
Integrated Biomedical Sciences
Assessing the Heterogeneity of Cardiac Non-Myocytes and the Effect of Cell Culture with Integrative Single Cell Analysis

Maritza Viridiana Quintero
Integrated Biomedical Sciences
Investigating the Mechanisms Involved in Early Steps of Ebola Virus Infection

Néstor Alexis Ruiz González
Radiological Sciences
A Device for Beam Quality Measurements in Computed Tomography
Candidates for the
Master of Science
May 15, 2020

Arwa Muthana Al Hugail
Dental Science
Evaluation of Healing at Molar Extraction Sites with Ridge Preservation
Using a Non Resorbable Dense Polytetrafluoroethylene (dPTFE) Membrane

Ahmed Ali Alelyani
Dental Science
Quantitative Assessment of Mechanical Allodynia and its Association with Endodontic Diagnosis, Pre-Operative Pain Levels and Catastrophizing

Neda Almojel
Dental Science
Inhibiting the Growth of Candida albicans Biofilm on Denture Materials by Organo-selenium-containing Dental Sealant

Ahmed Kattab Alotaibi
Dental Science
Comparing Maxillary Incisors Extrusion Using Clear Aligner Therapy with Facial Attachments versus Facial and Lingual Attachments

Akemi Kushida Arzouman
Dental Science
Impact of Different Surgical Protocols on Dimensional Changes or Oral Soft Tissue Autografts. A Randomized Controlled Trial

Sana Banday
Dental Science
Differences in Maxillary and Mandibular First Molar Shape and Size in Class I, Class II and Class III Malocclusions in Hispanics Using Geometric Morphometric Analysis

Lizandre Belanger
Dental Science
Identification of Therapeutic Targets in Diabetes-Inducted Breast Cancer Metastasis
Corbin Brady Clifton  
Dental Science  
*External Root Absorption of Mandibular Incisors in Patients Treated with Empower Self-Ligating Brackets versus Invisalign: A Cone-Beam Computed Tomography Study*

Erica Michelle Newman Evans  
Cell Systems and Anatomy  
*A Cadaveric Study of Variations of the Facial Artery*

Wesley Robert Gass  
Dental Science  
*CBCT Evaluation of Inter-Arch Transverse Skeletal Relationships in Non-Crossbite Subjects*

Sean Bradford Hershberger  
Dental Science  
*Effect of Proprietary Filter Application and Artifact Removal Sequences on Contrast-to-noise ratio*

Jenna Claire Hyer  
Dental Science  
*Detection of Dental Calculus Using Digital Radiography*

Hillary Renee Key  
Dental Science  
*Radiographic Distance from the Cemento-Enamel Junction to the Alveolar Crest in Periodontal Health*

Sarah Michelle Khoury  
Cell Systems and Anatomy  
*Investigating the Role of Mitochondrial Trifunctional Protein Subunits in Neuroprotection*

Michael Santino Luna  
Dental Science  
*Characterization of Epithelial Lineage Resulting in the Formation Enamel and Junction Epithelium*

Derick Esker Mayberry  
Dental Science  
*Effects of Advanced Glycation End-Products on Osteoblasts*
Aaron Clark Nelson
Dental Science
A Randomized control Trial on the Impact of Healing Time on Wound Healing Following Ridge Preservation Using a 70/30% Combination of Mineralized and Demineralized Freeze-Dried Bone Allograft

Marie Elizabeth Richey
Dental Hygiene
Job Satisfaction and Retention of Part-Time Dental Hygiene Faculty in the US and Canada

Adam Edward Saltz
Dental Science
Different Phenotype Protocols for Immediate Dental Implants

Chris Yang
Dental Science
Fracture Resistance on Anterior Full Coverage High Translucent Zirconia Restoration Following Endodontic Access Preparation
Joint Degree
Candidates for the Degree
Doctor of Pharmacy
May 15, 2020

Brenda Astorga
Courtney Baus
Eldridge Boyce
Claire Brandt
Alana Coleman
Richard Crowell
Ravi Gandhi
Kevin Gian
David Giang
William Godinez
Anjeanette Gonzalez
Chelsea Griffin
James Hsu
Ashly Nasima Ibrahim
Christopher Jackson
Alyeshka Jusino-Acosta
Kaitlin Kennedy
Hanna Kim
Falak Lalani
Andres Leos
Robert Moton
Hannah Mucha
Rupesh Mayur Panchal
Taylor Patek
Jessica Robertson
Sarvnaz Sadrameli
Ryan Shaw
Steven Swank
Michelle Tran
Melissa Weller
Patrick Whaley
Alexander Yap
Jessica Ye
Candidates for the Graduate Certificate in Translational Science
May 15, 2020

Aman Kaur

Candidates for the Doctor of Philosophy
June 26, 2020

Samantha Marlene Adler
Integrated Biomedical Science
Stress Effects on Neuronal Connectivity in the Orbitofrontal Cortex

Kristina Andrijauskaite
Translational Science
Novel Role of Natural and Synthetic Glucocorticoids in Breast and Colon Cancer or Stress can Kill You

Eric Christopher Baeuerle
Integrated Biomedical Science

Laura Caflisch
Integrated Biomedical Science

Cassandra Dee Leonardo
Radiological Sciences
Genetics Influence over Age-Related Functional Connectivity Changes within the Default Mode Network of the Aging Brain

Isabel Calderon Martinez
Nursing Science
Exploring Demands Favored by Today’s Nurse Leaders

Miryam Marta Pando
Integrated Biomedical Sciences
Regulation of Peripheral Kappa Opioid Receptor Mediated Antinociception

Holly Marie Parenica
Radiological Sciences
Clinical Implementation of Monte Carlo Modeling of the Elekta Versa HD Linear Accelerator with the Agility Collimator Head
Petra Elizabeth Jans Pederson
Integrated Biomedical Sciences
*Novel Approaches to Improving the Treatment of Triple Negative Breast Cancer*

Carlos Eduardo Rivera
Integrated Biomedical Sciences
*B Cell TLR/BCR Co-engagement Induces Hypermutated and Class-Switched Protective Antibody Responses in Absence of T Cells*

Pooja Yadav
Integrated Biomedical Sciences

Gabriela Zaragoza
Nursing Science

Candidates for the
Master of Science
June 26, 2020

Ahmed A. Almeshari
Dental Science
*Accuracy of CBCT machine in detecting root fracture when Metal Artifact Reduction (MAR) filter is used at different setting of Kvp on Plameca ProMax3D*

Morgan Courtney Bucknor
Cell Systems and Anatomy
*The Role of the Kynurenine Pathway on Neural Stem Cell Function*

Adrian Veronique Cebula
Immunology and Infection
*Yersinia-mediated Colorectal Cancer Cell Death*

Jaime Coronado
Immunology and Infection
*A Novel DNA-Binding Domain Important For Antiviral Function*
Ronald Rabaisri Cutler  
Cell Systems and Anatomy  
*Microglia Phagocytosis Contributes to Neural Stem Cell Loss in the Aging Subventricular Zone*

Samantha K. D’Spain  
Immunology and Infection  
*Agrobacterium tumefaciens Mediated Transformation of Candida glabrata*

Samin Javanmardi  
Personalized Molecular Medicine  
*MED12 Mutation Associated Genomic Instability in Uterine Fibroids*

Danielle Brooke Molotsky  
Immunology and Infection  
*The Identification of Adhesion Domains and Antigenic Regions of the P140 Protein from Mycoplasma genitalium*

Gretchen Anne Morrison  
Immunology and Infection  
*IGS Sequence Analysis by Nanopore Sequencing of Cryptococcus Species*

Dariela Aracely Perez  
Immunology and Infection

Jason Douglas Pizzini  
Immunology and Infection

Ivan P. Rubalcava  
Cell Systems and Anatomy

Rana Aly Sharaf  
Dental Science

Tai Angelica Tong  
Immunology and Infection  
*Identification and Characterization of a Novel Virulence Factor in Mycoplasma genitalium*
Rolando Treviño Jr.
Immunology and Infection
*Identification of Novel antischistosomal drugs*

Chioma Nnasom Udeaja
Immunology and Infection
*Redox Regulation of Autophagy in Thymic Stromal Cells*

Kizil Ather Yusoof
Immunology and Infection
*Efficacy of the 12-well Color Plate Tuberculosis Diagnostic Test*
The University of Texas System
Board of Regents

Officers

Kevin P. Eltife
Chairman, Tyler

Janiece Longoria
Vice Chairman, Houston

James C. “Rad” Weaver
Vice Chairman, San Antonio

Members

David J. Beck, Houston

Christina Melton Crain, Dallas

R. Steven Hicks, Austin

Jodie Lee Jiles, Houston

Nolan Perez, M.D., Harlingen

Kelcy L. Warren, Dallas

Student Regent

Daniel R. Domínguez, El Paso

General Counsel

Francie A. Frederick, J.D., Austin
The University of Texas System Administration

James B. Milliken, J.D.
Chancellor

Steven Leslie, Ph.D.
Executive Vice Chancellor for Academic Affairs

Scott C. Kelley, Ed.D.
Executive Vice Chancellor for Business Affairs

David L. Lakey, M.D.
Vice Chancellor for Health Affairs and Chief Medical Officer

Randa S. Safady, Ph.D.
Vice Chancellor for External Relations, Communications and Advancement Services

John M. Zerwas, M.D.
Executive Vice Chancellor for Health Affairs

Amy Shaw Thomas, J.D.
Senior Vice Chancellor for Health Affairs

Stacey Napier, J.D.
Vice Chancellor for Governmental Relations

Daniel H. Sharphorn, J.D.
Vice Chancellor and General Counsel
The University of Texas
Health Science Center at San Antonio
Executive Leadership

William L. Henrich, M.D., MACP
President

Andrea Marks, M.B.A., CPA
Senior Executive Vice President and Chief Operating Officer

Eileen T. Breslin, Ph.D., RN, FAAN
 Dean, School of Nursing

Peter M. Loomer, B.Sc., D.D.S., Ph.D., MRCD(C), FACD
 Dean, School of Dentistry

Robert Hromas, M.D., FACP
 Dean, Joe R. & Teresa Lozano Long School of Medicine

David C. Shelledy, Ph.D., RRT, FAARC, FASAHP
 Dean, School of Health Professions

David S. Weiss, Ph.D.
 Dean, Graduate School of Biomedical Sciences

Heather Adkins, M.S.
 Vice President and Chief Marketing and Communications Officer

Yeman Collier
 Vice President and Chief Information Officer

Mary G. DeLay, M.B.A.
 Vice President and Chief of Staff, Office of the President

Armando T. Diaz, M.Ed.
 Vice President for Governmental Relations

Andrea Giuffrida, Ph.D.
 Vice President for Research

Patrick Kaminski, M.B.A.
 Vice President for and Chief Strategy Officer

James D. Kazen
 Executive Vice President for Facilities Planning and Operations

Ginny Gomez-Leon, M.B.A., CPA
 Vice President and Chief Financial Officer

Jacqueline Lee Mok, Ph.D.
 Vice President for Academic, Faculty and Student Affairs
Deborah H. Morrill, M.S.
Vice President for Institutional Advancement and Chief Development Officer

Amy S. Tawney, M.B.A., SPHR, SHRM-SCP
Vice President and Chief Human Resources Officer
Academic Ceremony and Regalia

Commencement ceremonies are grounded in ancient religious, educational and civic rituals. Today’s ceremony begins with a grand procession led by the Marshal, followed by the President, Dean, Dignitaries, Assistant Marshals, Faculty and Graduates. Inspiring to observe, the procession demonstrates unity and collegiality among health care professionals while highlighting their distinctiveness with symbols of robe, cap, tassel, hood and cord.

The University Mace
The Marshal leads the academic procession carrying the president’s academic mace, a polished brass scepter that represents The University of Texas Health Science Center at San Antonio’s authority to educate students and grant degrees. The mace is decorated with the university seal and the caduceus, an ancient depiction of two snakes wrapped around a winged staff, sometimes used as a symbol of the medical profession.

The Academic Regalia
The contemporary tradition of wearing academic regalia for university ceremonies dates to the 11th and 12th centuries, when the great European universities were being established. At that time, students organized themselves into guilds, or associations, called universitates. Members of the universitate wore distinctive gowns to identify their group and differentiate between apprentices and masters. A “bachelor” was a man who assisted another and was usually an apprentice within the guild. A “master” was recognized by guild superiors as having reached a high level of expertise and was licensed to practice and teach as a full-fledged guild member.

The Robe
During the medieval period, men and women alike wore long robes as everyday clothing. The simplicity or elegance of the individual’s robe identified them as peasants, clergy, students or royalty. To some extent, similar distinctions are made in today’s academic regalia. For example, the bachelor’s robe is simply designed with long pointed sleeves. It is said that the sleeves were originally used by the student, or apprentice, to carry scrolls on which their lessons were written. The master’s robe is similar in style, but the long, oblong sleeves are closed. The doctor’s robe is the most elaborate, with a long, flowing body, velvet trim on the front and large bell-shaped sleeves with three velvet bars. Typically, academic robes are made of black fabric, but some universities have respectfully adopted other colors for doctoral gowns.

The Hood
The hood is a symbol of achievement — the means by which the degree and the college awarding the degree are readily recognized. The size and shape emphasize the degree level — the Doctor being the largest, followed by the Master and the Bachelor. The colors in the satin lining are those approved and authorized by the college or university conferring the degree. The colors for The University of Texas graduate are orange and white…the color of the velvet border and robe and sleeve, if any, indicates the degree earned (dark blue for Philosophy, light blue for Education, gold for Science, etc.).

Degrees and Colors

<table>
<thead>
<tr>
<th>Degree</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts</td>
<td>White</td>
</tr>
<tr>
<td>Dentistry</td>
<td>Lilac</td>
</tr>
<tr>
<td>Education</td>
<td>Light Blue</td>
</tr>
<tr>
<td>Fine Arts</td>
<td>Brown</td>
</tr>
<tr>
<td>Law</td>
<td>Purple</td>
</tr>
<tr>
<td>Library Science</td>
<td>Lemon</td>
</tr>
<tr>
<td>Medicine</td>
<td>Kelly Green</td>
</tr>
<tr>
<td>Nursing</td>
<td>Apricot</td>
</tr>
<tr>
<td>Pharmacy</td>
<td>Olive Green</td>
</tr>
<tr>
<td>Philosophy</td>
<td>Dark Blue</td>
</tr>
<tr>
<td>Public Health</td>
<td>Salmon Pink</td>
</tr>
<tr>
<td>Science</td>
<td>Gold</td>
</tr>
<tr>
<td>Veterinary Science</td>
<td>Gray</td>
</tr>
</tbody>
</table>
During today’s ceremony, many faculty will be wearing doctoral hoods of varied colors that indicate the degree-granting university and the person’s academic discipline. Some faculty wear hoods for the Doctor of Philosophy, trimmed in dark blue velvet, which represents mastery of learning and scholarship in any academic discipline and does not represent the academic discipline of philosophy.

Individuals with master’s and doctoral degrees wear elegant hoods lined and trimmed with satin and velvet that tell about the person’s academic history and credentials. Hoods were originally worn by monks to cover their shaved heads in cold weather and, when removed from the head, the hood could be used as a container for collecting alms. The master’s hood is 3½ feet long, and the doctoral hood is longer and wider.

**The Cap and Tassel**

In the United States, two styles of caps are worn with academic robes: the mortarboard, a flat, stiff board that appears to balance on the head, and the tam (short for tam o’shanter), a soft hat made of velvet. Generally, mortarboards are covered with black fabric; tams may be of various colors, depending on the wearer’s academic field or the institution’s tradition. The square, flat shape of the mortarboard represents the book, a symbol of scholarship. Falling off the side of the mortarboard or tam is a tassel, which symbolizes the university mace.

This Commencement Program represents a list of students expected to fulfill all the degree requirements in their respective programs as of May 9, 2020. Although the list is verified by the Dean’s Office prior to publication, we apologize in advance for any inadvertent omission or inclusion of names.

Some information adapted from:
Notes
Notes