UNT System College of Pharmacy

College of Pharmacy Profile

Fall 2016
UNT System College of Pharmacy

• The first 4-year college of pharmacy based in north Texas
  • DFW metropolitan area has 6.7 million residents
  • More than 22,000 hospital beds
  • Nearly 800 community pharmacies

• The first college of pharmacy in Texas based on main academic health science center campus
  • The class of 2017 began classes in August 2013
  • The class of 2018 began classes in August 2014
  • The class of 2019 began classes in August 2015
  • The class of 2020 began classes in August 2016
Global Strategy for Program Building

Program embellishments

<table>
<thead>
<tr>
<th>Develop &amp; maintain partnerships</th>
<th>PhD, MS, Dual degree programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advance team based healthcare</td>
<td>Advance therapeutic development</td>
</tr>
<tr>
<td>Extraordinary doctor of pharmacy educational program</td>
<td></td>
</tr>
<tr>
<td>Culture of assessment and continuous quality improvement</td>
<td></td>
</tr>
<tr>
<td>People and culture</td>
<td></td>
</tr>
</tbody>
</table>
PURPOSE: Transform lives in order to improve the lives of others
VISION: Be an extraordinary team committed to excellence and unafraid to challenge conventional wisdom
MISSION: Create solutions for a healthier community by developing patient centered pharmacy professionals, promoting team healthcare and optimizing health through discovery
VALUES: Serve others first: Encourage growth, wellbeing, and success of each other and people we serve
       Integrity: Uphold the highest ethical standards
       Respect: Treat everyone with dignity and compassion
       Collaboration: Work together to achieve shared goals
       Be visionary: Create innovative solutions in the pursuit of excellence
MOTTO: "We make healthcare better"
Our motto: “We make healthcare better.”

- Healthcare of the future is a team sport: Many opportunities to learn team healthcare
  - UNT Health Science Center has students of pharmacy, medicine, physician assistant, physical therapy, public health, biomedical research
  - TCU has students of nursing, social work, communication sciences, kinesiology, speech therapy, nutrition, dietetics
  - TCU and UNT Health Science Center jointly developing a second medical school in Fort Worth
- Pharmacists are crucial healthcare team members
  - Doctors of pharmacy are the therapy experts of the team and more
- Pharmacists are crucial for healthcare access
  - Doctors of pharmacy are readily available to provide health & therapy information
- Healthcare needs better therapies
  - Therapies of tomorrow are being developed at the College of Pharmacy
The program is growing in size & complexity.
Leadership team

- **Program Development**
  - Assistant to the Dean
  - William Lubawy

- **Academic Affairs**
  - Associate Dean
  - Tina Machu

- **Academic Program Coordinator**
  - Austin Luna

- **Program Assessment**
  - Assistant Dean
  - Annesha White

- **Experiential Education**
  - Assistant Dean
  - Lisa Killam-Worrall

- **Bill Lubawy, PhD**
- **Tina Machu, PhD**
- **Annesha White, PharmD, PhD**
- **Lisa Killam Worrall, PharmD**
The two academic departments are growing in faculty numbers.

Iok-Hou Pang and Michael Jann lead the departments and serve on the College Leadership team.

Iok-Hou Pang, PhD
Michael Jann, PharmD
Our Experiential Education Leadership Team

- Lisa Killam Worrall, PharmD
- Shara Elrod, PharmD
- Emmanuel George, PharmD
- Randy Martin, PharmD
Global Strategy for Program Building

Program embellishments

- Develop & maintain partnerships
- PhD, MS, Dual degree programs
- Advance team based healthcare
- Advance therapeutic development

Extraordinary doctor of pharmacy educational program

Culture of assessment and continuous quality improvement

People and culture
Our Goal of Extraordinary Pharmacy Education

• Our educational model: "Engaged learning with frequent practice"

• Striving to continuously reinforce the lifelong need to
  • Acquire new knowledge
  • Apply knowledge to solve problems
  • Communicate solutions to patients

• Prepare for learning before each class session

• Find ways to improve every day
College of Pharmacy Curriculum Overview

• Years 1 – 3
  • Classroom and laboratory activities
  • Interprofessional educational activities & opportunities
  • Introductory Pharmacy Practice Experiences (IPPE)
    • Example: Seniors Assisting in Geriatric Education (SAGE)

• Year 4
  • Advanced Pharmacy Practice Experiences (APPE)
    • Hospital
    • Community pharmacy
    • Ambulatory Care
    • Elective
## Affiliation Agreement Update

<table>
<thead>
<tr>
<th>Facility</th>
<th>Status</th>
<th>Description</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community Pharmacy</td>
<td>Fully Executed</td>
<td>780 Pharmacies&lt;br&gt;Walmart, CVS, Walgreens, HEB, Target, Kroger, Tom Thumb, Brookshire, and Albertson&lt;br&gt;Various Independent Pharmacies</td>
<td>780 Pharmacies</td>
</tr>
<tr>
<td>Institutional Pharmacy</td>
<td>Fully executed</td>
<td>66 hospitals (18701 beds)&lt;br&gt;JPS, HCA, Texas Health Resources, Parkland, North Texas VA and Central Texas VA,</td>
<td>21,252 beds</td>
</tr>
<tr>
<td></td>
<td>In Process</td>
<td>12 hospitals (2551 beds)&lt;br&gt;Baylor University Medical Center, Kindred Hospital, Methodist Richardson, Children’s Medical Center, UTSW</td>
<td></td>
</tr>
<tr>
<td>Further Outreach</td>
<td>Ongoing</td>
<td>More Independent Pharmacies, Specialty Pharmacies, Non-direct patient care elective sites/preceptors, Indian or Public Health Service sites</td>
<td>--</td>
</tr>
</tbody>
</table>
Doctor of pharmacy classes of 2017, 2018, 2019, 2020

Class of 2017

Class of 2018

Class of 2019

Class of 2020
## UNT System College of Pharmacy Class Profiles

<table>
<thead>
<tr>
<th>Category</th>
<th>Class of 2017</th>
<th>Class of 2018</th>
<th>Class of 2019</th>
<th>Class of 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of students</td>
<td>82</td>
<td>84</td>
<td>110</td>
<td>100</td>
</tr>
<tr>
<td>Cumulative GPA</td>
<td>3.38</td>
<td>3.43</td>
<td>3.39</td>
<td>3.49</td>
</tr>
<tr>
<td>Math &amp; Science GPA</td>
<td>3.36</td>
<td>3.29</td>
<td>3.28</td>
<td>3.32</td>
</tr>
<tr>
<td>*Composite PCAT Score</td>
<td>65.3</td>
<td>74.5</td>
<td>71.2</td>
<td>72.6</td>
</tr>
<tr>
<td>Females</td>
<td>56%</td>
<td>48%</td>
<td>58%</td>
<td>64%</td>
</tr>
<tr>
<td>Males</td>
<td>44%</td>
<td>52%</td>
<td>42%</td>
<td>36%</td>
</tr>
<tr>
<td>Underrepresented ethnic groups</td>
<td>32%</td>
<td>28%</td>
<td>17%</td>
<td>22%</td>
</tr>
</tbody>
</table>

*National Average 54*
College of Pharmacy Accreditation

• All colleges of pharmacy in the USA are accredited by the Accreditation Council for Pharmacy Education (ACPE)

• Accreditation is a three-step process
  • Pre-candidate accreditation – granted in June 2013
    • First class admitted in August 2013
  • Candidate accreditation – granted in June 2014
    • Graduates of the College who pass licensing exams will be registered pharmacists
    • Second and third classes admitted August 2014 & 2015
  • Candidate accreditation continuation – granted in June 2016
    • Fourth class admitted in August of 2016
  • Full accreditation – only possible after first class graduates (2017)
Global Strategy for Program Building

Program embellishments

- Develop & maintain partnerships
- PhD, MS, Dual degree programs

Advance team based healthcare
- Advance therapeutic development

Extraordinary doctor of pharmacy educational program

Culture of assessment and continuous quality improvement

People and culture
USA health care versus the world

- The USA health care system is by far the most expensive worldwide
- USA health care quality rankings
  - are consistently outside of the top 10 worldwide
  - often near 20th worldwide
- Factors that contribute to USA health care costs and rankings include
  - Fragmentation of health care delivery (lack of teamwork)
  - Lack of effective management of chronic diseases & conditions
  - Lack of convenient access to health care
The health care burden of chronic diseases & conditions

- Alzheimer's Disease
- Arthritis
- Asthma & other breathing diseases
- Cancer of breast, colon, lung, & prostate
- Depression
- Diabetes
- Heart disease
- High blood pressure
- Kidney disease
- Obesity
- Osteoporosis

Fraction of a dollar spent on management of chronic diseases & conditions

- 75 cents for all health care patients
- 83 cents for Medicaid patients
- 96 cents for Medicare patients

Source: Center for Disease Control
Prescription medications are an important component of health care costs

<table>
<thead>
<tr>
<th>Age in years</th>
<th>Number of prescription medications daily</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 or more</td>
</tr>
<tr>
<td>Under 18</td>
<td>23%</td>
</tr>
<tr>
<td>18-44</td>
<td>38%</td>
</tr>
<tr>
<td>45-64</td>
<td>67%</td>
</tr>
<tr>
<td>65 and over*</td>
<td>90%</td>
</tr>
</tbody>
</table>

*20% of senior citizens are prescribed 10 or more medications daily

Source: Center for Disease Control
Medication & disease management are crucial to making healthcare better

- 85% of healthcare dollars involve chronic diseases & conditions
  - High blood sugar (leading to Type 2 diabetes)
  - High blood pressure (leading to heart attack, stroke, kidney diseases)
  - High blood cholesterol (leading to heart attack & stroke)
  - Severe breathing problems (the result of asthma and chronic obstructive lung diseases)

- Chronic diseases & conditions increasingly require medication & disease management

- Medication management is an urgent unmet health care need
  - 25% of prescriptions are not picked up
  - 50% of prescriptions are not taken as prescribed

- Disease management is an urgent unmet health care need
  - Many individuals are unaware of high blood pressure or high blood sugar
Can doctors of pharmacy help with chronic disease management?

• Based on years of formal education, physicians are the only health care professionals more highly trained than pharmacists
• The doctor of pharmacy (PharmD) curriculum focuses primarily on post-diagnosis, including management of multiple chronic diseases and conditions
  • Doctors of pharmacy are experts in medication therapy
• Compelling evidence exists that pharmacist provided medication & disease management
  • Improves patient safety
  • Improves patient outcomes
  • Reduces health care costs (ROI 4:1) (US Surgeon General report)
• Pharmacists engaged in medication & disease management are involved in team health care
  • Through collective practice agreements with physicians
  • Collaboration with other health care professionals
Where can doctors of pharmacy increase health care access the most?

• Individuals with chronic diseases need frequent health care access to monitor the effectiveness of therapy
  • Hemoglobin A1C for diabetes long term
  • Blood glucose for diabetes short term
  • Blood pressure monitoring for hypertension
  • Medications and devices for breathing problems

• Community pharmacies are the most accessible point for health care
  • More than 60,000 community pharmacies in the USA
  • Nearly 600 community pharmacies in DFW area

• Community pharmacies have great potential to improve health care access
  • Remain points of access for distribution of pharmaceuticals
  • Increasingly becoming sites of medication management (again)
## Pharmacotherapy Faculty Involved in Healthcare Delivery

<table>
<thead>
<tr>
<th>Faculty</th>
<th>Practice</th>
<th>Practice Site</th>
<th>Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adenike Atanda</td>
<td>Ambulatory Care</td>
<td>North Texas Specialty Physicians</td>
<td>Clinical Pharmacist</td>
</tr>
<tr>
<td>Katura Bullock</td>
<td>Ambulatory Care</td>
<td>UNT Health Seminary Clinic</td>
<td>CMS 1115 Waiver</td>
</tr>
<tr>
<td>Patrick Clay</td>
<td>Infectious Diseases</td>
<td>CDC and Tarrant County</td>
<td>HIV MTM</td>
</tr>
<tr>
<td>Shara Elrod</td>
<td>Ambulatory Care</td>
<td>UNT Health Patient Care Center</td>
<td>HRSA and CMS 1115 Waiver</td>
</tr>
<tr>
<td>Jennifer Fix</td>
<td>Ambulatory Care</td>
<td>UNT Health</td>
<td>CMS 1115 Waiver</td>
</tr>
<tr>
<td>Caitlin Gibson</td>
<td>Internal Medicine</td>
<td>HCA Medical Center Arlington</td>
<td>Heart/Vascular Unit</td>
</tr>
<tr>
<td>Marian Gaviola</td>
<td>Critical Care</td>
<td>HCA Plaza Medical Center</td>
<td>ICU Services</td>
</tr>
<tr>
<td>Meredith Howard</td>
<td>Internal Medicine</td>
<td>HCA Plaza Medical Center</td>
<td>Internal Medicine</td>
</tr>
<tr>
<td>Meena Ramanathan</td>
<td>Infectious Diseases</td>
<td>HCA Medical Center Arlington</td>
<td>Antimicrobial Stewardship</td>
</tr>
<tr>
<td>Amuyla Tatachar</td>
<td>Ambulatory Care</td>
<td>Baylor Scott &amp; White Outpatient</td>
<td>Clinical Pharmacist</td>
</tr>
<tr>
<td>Sara Wettergreen</td>
<td>Ambulatory Care</td>
<td>UNT Health Patient Care Center</td>
<td>Clinical Pharmacist</td>
</tr>
<tr>
<td>W. Cheng Yuet</td>
<td>Ambulatory Care</td>
<td>UNT Health Seminary Clinic</td>
<td>CMS 1115 Waiver</td>
</tr>
</tbody>
</table>
Global Strategy for Program Building

- People and culture
- Culture of assessment and continuous quality improvement
- Extraordinary doctor of pharmacy educational program
- Advance team based healthcare
- PhD, MS, Dual degree programs
- Develop & maintain partnerships
- Program embellishments
Strateg to Advance Therapeutic Development at the UNTHSC

- Recruit the best science while meeting teaching needs for the Doctor of Pharmacy program
- Strengthen UNTHSC competitiveness in translational research along the therapeutic development pathway
- Strengthen UNTHSC research competitiveness in technologies that promise future advances in science
• To date, the College of Pharmacy has added translational research strength in
  • Target discovery (Pang, Ellis, Prokai, Wang, Wu, Yan)
  • Lead discovery & optimization (Cheng, Emmitte, Liu)
  • Formulation development & delivery (Dong, Prokai)
  • Preclinical Pharmacology & toxicology (Simecka, Weiss)
  • Clinical trial design (Penzak)
  • Clinical trail implementation (Clay, Jann)
  • Clinical trial analysis (pharmacometrics) (Chaturvedula)
  • Therapeutic outcomes research (White)
# Impact of College of Pharmacy Faculty on UNTHSC Sponsored Projects and Scholarly Activity

<table>
<thead>
<tr>
<th>Category</th>
<th>FY13</th>
<th>FY14</th>
<th>FY15</th>
<th>FY16</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pharmacy Faculty as PI</td>
<td>$50,000</td>
<td>$3,071,637</td>
<td>$3,289,336</td>
<td>$3,484,116</td>
<td>$9,895,089</td>
</tr>
<tr>
<td>Pharmacy Faculty in Supporting Roles</td>
<td>$249,992</td>
<td>$4,375,757</td>
<td>$4,761,294</td>
<td>$4,966,904</td>
<td>$14,353,947</td>
</tr>
<tr>
<td>Total Funding Impact</td>
<td>$299,992</td>
<td>$7,447,394</td>
<td>$8,050,630</td>
<td>$8,391,020</td>
<td>$24,249,036</td>
</tr>
<tr>
<td>Peer reviewed published papers</td>
<td>19</td>
<td>27</td>
<td>48</td>
<td>79</td>
<td>173</td>
</tr>
<tr>
<td>Intellectual property disclosures</td>
<td>1</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>13</td>
</tr>
</tbody>
</table>
Global Strategy for Program Building

- People and culture
  - PhD, MS, Dual degree programs
  - Advance team based healthcare
  - Advance therapeutic development
  - Extraordinary doctor of pharmacy educational program
  - Culture of assessment and continuous quality improvement
  - Program embellishments
    - Develop & maintain partnerships
The College of Pharmacy has developed or is in the process of developing multiple clinical partnership sites for faculty healthcare delivery:

- Current
  - UNT Health Patient Care Center
  - UNT Health Seminary Clinic
  - Tarrant County John Peter Smith (JPS) Health System
  - HCA Plaza Medical Center
  - HCA Medical Center Arlington
  - Baylor Scott & White-Dallas
  - Tarrant County Public Health
  - North Texas Specialty Physicians

- Developing
  - Baylor All Saints-Fort Worth Medical Center
  - Cook Children's Medical Center
  - Texas Health Harris Methodist-Fort Worth Medical Center
Resident Teaching Certificate Program

- The pharmacy resident teaching certificate program was developed as a bridge for the full development of a College residency program.
- Teaching Certificate Program was offered for the 2015-16 year.
- Based on the University of Kentucky Model and recommendations by ASHP*
- Institutions involved included (N = number of residents):
  - Cook Children’s Medical Center (2) – Fort Worth.
  - Baylor All-Saints Medical Center (2) – Fort Worth.
  - John Peter Smith (JPS) Health System (2) – Fort Worth.
  - Baylor LLC Outpatient (2) - Dallas.
  - Baylor University Medical Center (4) - Dallas.
  - Texas Methodist Dallas Medical Center (4) – Dallas.
  - Parkland Health System (4) – Dallas.
Development of Residency Programs
College of Pharmacy and North Texas Pharmacy Programs

- The College of Pharmacy was strongly encouraged by the ACPE Candidate site visit team to move forward on residency development.

- Opportunities for the PGY2 residents in the didactic teaching program is taken on a case-by-case basis discussed between the Residency Pharmacy Director and College of Pharmacy Course Director.

- PGY2 Residency in Transition of Care in collaboration with Texas Methodist Dallas
  - Start date July 2016

- PGY2 Residency Program in collaboration with JPS Health System
  - Start date July 2017

- Future Residency Program Collaborations July 2017
  - PGY2 Pediatrics – Cook Children’s Medical Center.
  - PGY1 Pharmacy Residency – Medical Center of Arlington
Global Strategy for Program Building

Program embellishments

- Develop & maintain partnerships
- Advance team based healthcare
- Extraordinary doctor of pharmacy educational program
- Culture of assessment and continuous quality improvement
- People and culture

- PhD, MS, Dual degree programs
- Advance therapeutic development
PhD Graduate Programs are developing

• Many College of Pharmacy faculty are affiliated with the UNTHSC Graduate School of Biomedical Sciences (GSBS)
  • Multiple GSBS students have rotated and studied with College of Pharmacy faculty
• A new PhD track in the GSBS with specialty in Pharmaceutical Sciences and Pharmacotherapy has been approved
• A PharmD/MS and PharmD/PhD graduate program has been developed.
Global Strategy for Program Building

Program embellishments

Develop & maintain partnerships

PhD, MS, Dual degree programs

Advance team based healthcare

Advance therapeutic development

Extraordinary doctor of pharmacy educational program

Culture of assessment and continuous quality improvement

People and culture
The College of Pharmacy will move to a new building in late 2018.
A building focused on the future

- **Level 1:**
  - Lobby
  - Healthcare Innovation Laboratory
  - Café
  - Student Lounge
  - Outdoor Plaza

- **Level 2:**
  - College of Pharmacy Interactive Classrooms
  - Pharmacy Skills Laboratory
  - Study Rooms
  - College of Pharmacy Administrative Offices
  - Outdoor Plaza with Medicinal Plants Garden

- **Levels 3, 4, 5:**
  - Faculty & Staff Offices
  - Open Concept Research Laboratories
Projection of Level 1 Healthcare Innovation Laboratory

Areas for:
- Marketing/education video wall
- Pharmacy
- Patient Counseling
- Self Care product information
- Demonstration kitchen
- Examination rooms
- Point of care testing laboratory
- Phlebotomy
- Urine collection
- Tele-pharmacy/medicine
- Provider work space
- Team huddle room
Thank You