SUNY Academic Medical Centers/Hospitals Committee
UB Health Sciences Overview

Michael E. Cain, MD
Vice President for Health Sciences and Dean,
School of Medicine and Biomedical Sciences

Anne B. Curtis, MD
UB Distinguished Professor
Charles and Mary Bauer Professor and Chair,
Department of Medicine

Kerri Pryce
PhD student, Department of Pharmacology and Toxicology

Tuesday, June 17, 2014
Buffalo Academic Health Center

2006
Isolated Medical Bands

Goal
Medical Symphony
Outline

- New Facilities/Infrastructure
- Programs and Leadership
- Impact on:
  - Faculty Growth
  - Inclusion and Cultural Enhancement
  - Education
  - Basic and Clinical Research
  - Affiliations with Great Lakes Health and RPCI
UB Clinical and Translational Research Center

170,000 square feet
$118 million
CTRC Molecular and Translational Imaging Center

- State-of-the-art imaging center devoted exclusively to research
- Leadership
  - Director: John M. Canty, Jr, MD
  - MRI Director: Robert Zivadinov, MD, PhD

<table>
<thead>
<tr>
<th>Scanner</th>
<th>Application</th>
<th>Status</th>
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<tbody>
<tr>
<td>PET CT</td>
<td>Humans and large animals</td>
<td>Operational</td>
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<tr>
<td>9.4 Tesla Micro MRI</td>
<td>Small animals and tissue</td>
<td>Operational</td>
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<tr>
<td>3 Tesla MRI</td>
<td>Humans and large animals</td>
<td>Delivered</td>
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<tr>
<td>320 slice CT</td>
<td>Humans and large animals</td>
<td>Delivery anticipated late 2014</td>
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# Newly Recruited Faculty in the Clinical and Translational Research Center

<table>
<thead>
<tr>
<th>Name</th>
<th>Position at UB</th>
<th>Previous Institution</th>
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</table>
| Andrew Talal, MD, MPH          | • Professor of Medicine  
• Chief, Division of Gastroenterology and Hepatology and Nutrition             | Cornell Medical College                     |
| James Jarvis, MD              | • Professor of Pediatrics  
• Chief, Division of Pediatric Allergy, Immunology and Rheumatology              | Columbia University                         |
| Richard Quigg, MD             | • Professor of Medicine  
• Chief, Division of Nephrology                                                  | University of Chicago                       |
| Mark Hicar, MD, PhD           | • Assistant Professor of Pediatrics                                             | Vanderbilt University                       |
| Bruce Troen, MD               | • Professor of Medicine  
• Chief, Division of Geriatrics and Palliative Medicine                           | University of Miami                         |
| Carroll (Mac) Harmon, MD, PhD | • Professor of Surgery  
• Chief, Pediatric Surgery                                                       | University of Alabama at Birmingham         |
New School of Medicine and Biomedical Sciences
Gross Anatomy Suite
GROSS ANATOMY INNOVATION

Thiel-preserved (plasticized) cadaveric specimens
- No detectable odor
- Lifelike flexibility of body parts
- Color preservation of muscle, viscera, and vasculature
- Superior antimicrobial preservation properties

Ethylene glycol, formalin, ammonium and potassium nitrates, boric acid. others
GROUND BREAKING FOR THE NEW
SCHOOL OF MEDICINE AND BIOMEDICAL SCIENCES
October 15, 2013
Robert Wood Johnson Foundation Fellowship awarded to an incoming medical student

Awards of Excellence for Promoting Inclusion and Cultural Diversity

Celebration of Inclusiveness in Medicine and Science Distinguish Lecture Series

Work in Progress: Data Development, Web Site, Strategic Plan
Department of Biomedical Informatics

Peter Elkin, MD
Department Chair

Administrative Assistant

Programming Resources x3

Post-Doctoral Fellows

Masters and PhD Students

External Collaborators

Study Coordinators

Division of Clinical Informatics
  Faculty

Division of Bioinformatics
  Faculty

Division of Public Health Informatics
  Faculty

Division of KR & Ontology Informatics
  Faculty

Division of Sociotechnical and Human Centered Design Informatics
  Faculty
Importance of Biomedical Informatics in Modern Health Care Systems

10. Personalized Medicine
9. ePrescribing (i.e., Drug-Drug Interaction Testing)
8. Evidence Based Medicine
7. Clinical Decision Support
6. Electronic Health Record Systems
5. Translational Research
4. Mapping the Human Genome
3. Systems for paying for high-quality care (eQuality)
2. Pubmed – Access and Cataloging Biomedical Literature
1. Systematizing the practice of medicine
UB Office of Interprofessional Education and Collaborative Practice

• Paul Wietig, EdD
• Assistant Vice President
• Interprofessional Education
• University at Buffalo
• Academic Health Center
UB IPE Pilot Project – Spring 2013

- Four groups of students from:
  - Dentistry
  - Medicine
  - Nursing
  - Occupational Therapy
  - Pharmacy
  - Physical Therapy
  - Social Work

- Hybrid experience
- Four face-to-face sessions focused on the core competencies
- Simulation experience included
Graduate Medical Education

Accreditation Status
• 60 ACGME-Accredited
  – 53/60 advanced to Next Accreditation System
    » Annual assessment of metrics
    » Self-study every ten years

Residents and Fellows (January 2014)
• Residents 651
• Fellows 125
  Total 776

Institutional Accreditation Site Visit
• Awarded continued accreditation effective October 16, 2013
• Self-study date: October 1, 2025
• No citations
Strategic faculty recruitment by new chair brought together a team with expertise in: molecular and behavioral pharmacology, genetics, stem cells and neural repair, and circadian rhythms.

Our focus is to understand neurobiological mechanisms and identify pharmacological targets and treatments for diseases of the nervous system.

This multifaceted approach has led to a three-fold increase in grant awards, graduate student trainees, and publications.
Teams efforts have discovered:

- The behavioral effects of a novel drug with potential to treat addiction to cocaine, methamphetamine and other drugs of abuse.
  
  *Jun-Xu Li, PhD. and David Dietz, PhD.*
  
  Thorn et al., Neuropsychopharmacology (online publication 14 May 2014)

- That stimulation of specialized brain neurons stops binge drinking providing a target for the discovery of pharmacological agents to treat alcoholism.
  
  *Caroline Bass, PhD. and collaborators at Wake Forest University.*
  
  Bass et al., Frontier Behavioral Neuroscience. (online publication 26 Nov 2013)

- Novel FDA-approved drug holds potential for treatment and recovery from Multiple Sclerosis (MS), a disease prevalent in New York State.
  
  *Fraser Sim, PhD. and Richard Salvi, PhD.*
  
  Recently funded by National Multiple Sclerosis Research Grant

- A family of K-channels as potential targets for development of drugs to treat depression
  
  *David Dietz and collaborators at Mount Sinai*
  
  Friedman et al., Science (online publication 18 April 2014)
Atrioventricular Block

- > 5 million Americans indicated for pacing therapy
- > 1 million patients have atrioventricular (AV) block

ACC NCDR-ICD Registry 2012.

Curtis AB, et al., NEJM 2013;368:1585-93
BlockHF Trial
Primary End Point Results Favored BiV Pacing for All Subgroups

<table>
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<tr>
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<th>N</th>
<th>Favors BiV</th>
<th>Favors RV</th>
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<tr>
<td><strong>Overall</strong></td>
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<td><strong>Gender</strong></td>
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<tr>
<td>Female</td>
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<td><strong>Baseline LVEF</strong></td>
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<td>≤ 35%</td>
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<tr>
<td>&gt; 35%</td>
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<td>CLASS III</td>
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<tr>
<td><strong>AV block</strong></td>
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<td>2nd Degree</td>
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<tr>
<td>3rd Degree</td>
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Curtis AB, et al., NEJM 2013;368:1585-93
School of Pharmacy and Pharmaceutical Sciences

- **Problem:** Drug development depends on well designed clinical trials that optimize pharmacokinetic-pharmacodynamic (PK-PD) relationships.
- **Discovery:** Mathematical models describing PK-PD relationships were developed to assess drug actions. The models created (cited over 400 times) have optimized the development of the majority of new drugs in the past 20 years.

School of Dental Medicine

- **Problem:** Do periodontal infections increase risk for heart disease, diabetes, and osteoporosis.
- **Discovery:** In-vitro studies of molecular and cellular mechanisms, animal models and human epidemiologic studies, and randomized clinical trials have demonstrated a causative link between periodontitis and cardiovascular disease. These data have led to the development of evidence-based recommendations for cardiologists and dentists to collaborate in the management of patients with cardiovascular disease.

School of Public Health and Health Professions

- **Problem:** Does hormone replacement (estrogen + progestin) therapy in menopausal women prevent chronic diseases, including heart disease.
- **Discovery:** Women’s Health Initiative, hormone replacement increased risk for heart attacks, stroke, blood clots, breast cancer and dementia. It offered no protection against mild cognitive impairment, but did reduce risk for colorectal cancer and fractures.

School of Nursing

- **Problem:** Real or perceived nursing shortage?
- **Discovery:** Dominant determinant of sustained nursing career is a positive work environment that drives job satisfaction and organizational commitment. This favorable work environment is strongly influenced by employers.
- **Key citation:** see www.workproject.org for papers (data cited from AJN 2014)
- **Funded for $6.06 million by RWJF 2005-2016.**
UB/MD PHYSICIANS’ GROUP
Practice Sites / Hospital Affiliations

60 Community Locations
UB/MD Practice Plans

2006: $117
2007: $138
2008: $154
2009: $165
2010: $177
2011: $178
2012: $193
2013: $207

(in millions)
UB Associates/UBMD
S. Tripathi
M. Cain

Department Chairs
Faculty

D. Hughes
Sr Assoc Dean, Clinical Affairs
CMO, Great Lakes Health

Board of Directors
J. Lomeo, Pres. & CEO
S. Tripathi
M. Cain

ECMC  BGMC  WCHOB

Key
ECMC – Erie County Medical Center
BGMC – Buffalo General Medical Center
WCHOB – Women and Children’s Hospital of Buffalo
Mandatory Shared Services
- Accounting and Auditing
- Compliance and Legal Services
- Group Marketing, Branding & Publicity
- Strategic Planning
- Joint Payor Contracting
- Information Technology

Optional Shared Services
- Human Resources
- Credentialing & Licensure
- General Accounting
- Revenue Cycle Operations
SMBS/UBMD – Hospital Affiliation Model

Opportunities

• Great Lakes Health (Kaleida/ECMC/WCHOB)
  – Joint Governance (UB representation)
  – Joint Clinical Service Line Planning
  – UBMD
    • Many Chief-of-Service positions at BGH, WCHOB, and ECMC
    • Leadership positions in informatics and quality outcomes
    • Increasing percentage of physician work force
    • Significant driver of hospital revenue and metrics for pay for performance
    • Significant driver of hospital capital expenditure decisions

• Roswell Park Cancer Institute
  – Collaboration in basic and clinical research
  – Provision of non-oncology clinical services
  – Finalization of critical departmental and clinical governance of oncology services

• Multiple/diverse sites for student and GME training and clinical research
• Resources for joint recruitments
• No financial obligations of hospital debt
SMBS/UBMD – Hospital Affiliation Model

Challenges

• Great Lakes Health
  – Not a full asset merger
  – Improving but suboptimal alignment of programmatic goals and financial incentives
  – Multiple UBMD staffing models (contracts, fee-for-service, hospital employment)
  – Hybrid medical staff (hospital, private practice, UB/MD)
    • Recruitment of faculty by hospital and private practice groups
    • UBMD not sole driver of capital expenditures or clinical outcomes
    • Competition for imaging, ancillary, pharmacy, vascular
    • Exclusive contracts with private groups in radiology, anesthesiology, cardiac surgery
    • Varied dominance of UBMD across clinical service lines
    • Variable commitment to academic mission

• Roswell Park Cancer Institute
  – Independent governance and attitude
  – Pseudo-members of SMBS academic departments
  – Direct competition with GLH and UBMD
  – No clinical/grant revenue in oncology to UBMD/SMBS

• No common EMR
• No hospital support for SMBS research/educational programs (except GME pass through)
• Partially integrated Academic Health Center