THE RESEARCH ENTERPRISE OF HENRY FORD HOSPITAL

Margot C. LaPointe, Ph.D.
Vice President for Research

WSU SOM PAD Seminar
Feb. 12, 2010
History: The Early Years

- HFH/HFMG was founded with an academic mission in 1915, and physicians have been involved in medical education and research since then.

- Research was originally organized in clinical departments, although a small Institute for Medical Research was founded in 1948.
History: The Modern Era

• In 1973, the Ford Foundation provided a $100M endowment to support research and education. HFHS has maintained its support for research since then.

• The endowment has allowed for a large expansion of research.
Early Research Programs

• Radiation physics
• Blood coagulation – proteins and biochemistry
• Electron microscopy
• Other departmentally-based programs
HFHS Strategic Goals for Research

To be recognized as a leading academic medical center that attracts the highest caliber of medical students, residents, scientists and physicians to Detroit
How did we develop our current research programs?

- Development of Clinical Centers of Excellence and Institutes to enhance clinical care across departmental lines
  - Heart and Vascular Institute
  - Neurosciences Institute
  - Bone and Joint Center
  - Josephine Ford Cancer Center
  - Vattikuti Urology Institute
  - Transplant Institute
Current Research Programs

• High blood pressure, heart failure, cardiovascular and renal diseases (12 PIs)

• Stroke, traumatic brain injury, brain tumors, MRI and imaging, etc (27 PIs)

• OA, osteoporosis, joint kinematics (7 PIs)

• Cancer – biology, genetics, gene therapy, screening, prevention (11 PIs)

• Immunology – autoimmune disease, juvenile diabetes (2)

• Population, Health Sciences and Health Outcomes (20 PIs)
Research Strategies

• Basic science and bioengineering studies

• Translational research

• Clinical research/clinical trials

• Population studies, focusing on causes of diseases, disease screening, prevention, and management, health economics and health outcomes
Research Staff

- 78 full-time PhD/MD researchers, 4 FTEs of part-time scientists, 1 full-time Vet, and 1 full-time VP;
- 37% with WSUSOM faculty appointments;
- Many with graduate student/postdoc training experience;
- >100 physicians doing clinical research;
- 100s of support staff;
- >100,000 sq ft of wet-bench lab space;
- 30,000 sq ft of space for health and healthcare researchers;
- 2 animal facilities and cores;
<table>
<thead>
<tr>
<th>Total Awards</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>NIH/Other Fed</td>
<td>$29,210,244</td>
<td>$28,920,498</td>
</tr>
<tr>
<td>Pharm/Industry</td>
<td>$23,684,768</td>
<td>$24,034,962</td>
</tr>
<tr>
<td>State/Local</td>
<td>$2,168,534</td>
<td>$550,035</td>
</tr>
<tr>
<td>Found/Other</td>
<td>$4,606,832</td>
<td>$3,161,044</td>
</tr>
<tr>
<td>TOTAL</td>
<td><strong>$59,670,378</strong></td>
<td><strong>$56,666,539</strong></td>
</tr>
</tbody>
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Indirect Revenue: $13,071,141
Facts About Our National Institutes of Health (NIH) Funding

• Rank 4th in Michigan (after 3 universities)
• Rank 1st in Michigan health systems
• Rank 170 out of 2000+ institutions receiving NIH grant awards in 2008
2008 National Institutes of Health (NIH) Funding: Non-University Based Health Care Systems in Michigan

<table>
<thead>
<tr>
<th>Health Care System</th>
<th># of Awards</th>
<th>Funding Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Henry Ford Health System</td>
<td>49</td>
<td>$18,457,877</td>
</tr>
<tr>
<td>William Beaumont Hosp.</td>
<td>5</td>
<td>$1,984,713</td>
</tr>
<tr>
<td>St. Joseph Mercy</td>
<td>3</td>
<td>$1,837,438</td>
</tr>
<tr>
<td>Spectrum Health Hospitals</td>
<td>1</td>
<td>$1,198,666</td>
</tr>
</tbody>
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### 2008 NIH Funding Awarded to Michigan Medical Schools

<table>
<thead>
<tr>
<th>Schools of Medicine</th>
<th># of Awards</th>
<th>Total $</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of Michigan</td>
<td>723</td>
<td>$297,057,553</td>
</tr>
<tr>
<td>Wayne State University – SOM</td>
<td>167</td>
<td>$52,339,733</td>
</tr>
<tr>
<td><strong>Henry Ford Health System</strong></td>
<td>49</td>
<td>$18,457,877</td>
</tr>
<tr>
<td>MSU College of Human Medicine</td>
<td>23</td>
<td>$7,405,922</td>
</tr>
<tr>
<td>MSU College of Osteopathic Medicine</td>
<td>17</td>
<td>$3,886,947</td>
</tr>
</tbody>
</table>
Highlights of our NIH Funding

P01 - Vasoactive Autacoids in Blood Pressure Regulation
   PI, OA Carretero, Hyp. and Vasc. Res. Div.,
   1982 - present - $2.26M/yr

P01 - Center for Stroke Research
   PI, Michael Chopp, Neurology Research
   1986- present, $1.39M/yr

P01 - Treatment of Stroke Injury with Marrow Stromal Cells
   PI, Michael Chopp, Neurology Research
   2003 - present - $1.19M/yr

P01 - Molecular Gene and Radiation Therapies for Cancer
   PI, Svend Freytag, Rad. Onc. Res.
   2004 - $1.8M/yr

P01 – Blood Pressure Regulation: Novel Roles for the Kidney.
   2009 - present $2.1M/yr
Highlights of our NIH Funding:
Asthma/allergy

- Asthma education for teens
- Etiology of pediatric atopy
- Early environmental hygiene and pediatric atopy
- Wheals (Allergy and Asthma Longitudinal Study)
- Mechanism of endotoxin’s effect on allergy risk
- Using information technology to improve asthma adherence
- Pharmacogenomics of inhaled corticosteroid responsiveness in patients with asthma

(Investigators: C. Johnson PhD, C. Joseph PhD, K. Williams MD, E. Zoratti MD)
Cancer Epidemiology/Prevention/Control

- A nested case-control study of prostate carcinogenesis. PI: Ben Rybicki PhD

- Physician recommendation and colorectal cancer screening. PI: Jennifer E. Lafata PhD

- Cancer prevention as treatment demonstration for ethnic and racial minorities. PI: R. Chapman MD.

- Prostate, lung, colorectal and ovarian cancer screening. PI: Paul Kvale, MD

- National lung screening trial. PI: Paul Kvale MD

- Cancer research network. Site PI: CC Johnson PhD

- Adult brain tumor consortium. PI: Tom Mikkelsen MD
• Cardiac Energy Metabolism in Heart failure: heart rate control, myocardial energetics and progression of HF. PI: Tony Sabbah PhD, Cardiovascular Research Research (HVI)
Bone and Joint Center

• Shoulder function after rotator cuff repair. PI: Michael Bey PhD

• Serum microRNAs as biomarkers of post-traumatic OA. PI: Gary Gibson PhD
Imaging Research

- Cardiac MRI and PET in the diagnosis of cardiac sarcoidosis. PI: Mouaz Al-Mallah MD
- MRI biomarkers of response in cerebral tumors. PI: James Ewing PhD
- MRI of acute vascular injury and hemorrhagic transformation in ischemic stroke. PI: Robert Knight PhD
- Stem cells as delivery vehicles and imaging probes for glioma gene therapy. PI: Arbab Ali, MD PhD
Core Facilities

- Imaging – MRI, uSPECT, uCT, IVIS bioluminescence
- Biomedical Engineering lab for joint kinematics (biplanar x-ray system, detectors and imaging software)
- Biostats, epi, database design and programming
- CTO
HFHS-WSU Collaborations

- INPHAASE grants (jointly conducted population and epidemiology studies)
- MD/PhD stipends
- Training of IBS graduate students
- Some teaching of graduate-level courses
More Information

Research Annual Report (PIs, grants, publications)

- [http://www.henryfordhealth.org/body.cfm?id=45206](http://www.henryfordhealth.org/body.cfm?id=45206)
- mlapoin1@hfhs.org