An Approach to Recruiting Research Faculty

Chief Administrative Officer Break-Out Session

Weber Shill
Chief Administrative Officer

Scott Dykeman
Chief Administrative Officer
Clinical Faculty

• University Orthopedics, Inc., employs all Clinical Faculty

• Private Practice Model
  • Brown University – teaching affiliation for Resident Education
  • Lifespan health system – research and practice affiliation

• Clinical Faculty pay an Academic Support Tax
  • Step tax on Clinical Revenue
  • Set tax on Royalties
  • Average 6% of Revenue approximately $2.5M/year about 50% is spent on Research

• Chief of the Department of Orthopaedics (Brown University and Lifespan) is President of University Orthopedics
  • Chief controls allocation of Academic Support Tax (pays tax as well)
2013 Funded Projects

Total: $29.5 million
2010 - 2015
Total Grant Income: $44.0M
Total Indirect Income: $12.2M

Only Investigators > $200,000
Senior Faculty

• Base Salary NIH cap – currently $180,000
• Incentive 25% of Grant Funding ($45,000 if fully funded) paid by Academic Support Tax on Clinical Faculty
  • Clinical Faculty pays only $45,000 for Senior Level PhD Researcher and the Researcher makes 125% of the NIH Cap $225,000 instead of $180,000
• 5 Endowed Chairs for Senior Researchers– approximately $150,000/year
• Return 25% of Indirect Expense Funding to the Researcher
  • Typically employ 3-5 post doctoral candidates on their grant/indirect funding
• Scientists want stability – 5 year contracts
• Senior Researchers want to be rewarded for the Intellectual Property they develop – you must fight your institution for a reasonable IP Policy in order to attract top researchers
## IP Policy

<table>
<thead>
<tr>
<th></th>
<th>First $1MM of Net Income</th>
<th>Net Income in Excess of $1MM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inventor</td>
<td>50%</td>
<td>35%</td>
</tr>
<tr>
<td>Inventor’s Lab or Research Group</td>
<td>25%</td>
<td>25%</td>
</tr>
<tr>
<td>Hospital Department of Inventor</td>
<td>15%</td>
<td>15%</td>
</tr>
<tr>
<td>Hospital</td>
<td>10%</td>
<td>25%</td>
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</tbody>
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Junior Faculty

• Base Salary typically $60-90K
• Senior Faculty will employ Junior Faculty on their grants whenever possible
• Attempt to utilize Senior Faculty’s basic science to seed new research
• Provide assistance with grant writing Doug Moore, MS, and statistical analysis Jason Machan, PhD (supported by Chief)
  • Chondrosarcoma Grant submitted by researcher scored 30%
  • Scored 3% after grant writing and statistical assistance
• Junior Researchers need exposure to other researchers and clinicians to develop their research
  • Weekly Research Meetings with Chair and Clinicians (at UOI)
  • Informal pizza and discussion
• Typically 2-5 year process for grant funding
Top 10 Cartilage Researchers (Active Projects)

SearchSpace Visualization: cartilage

Statistics and data visualization based on the results returned by this SearchSpace's search criteria. Click on the chart to see more details.

Chart Data: Top 10 Principal Investigators by Funding  
Chart Type: Column

<table>
<thead>
<tr>
<th>Name</th>
<th>Funding (in $)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Randy N. Rosen</td>
<td>$9,952,594</td>
</tr>
<tr>
<td>Qian Chen</td>
<td>$8,853,623</td>
</tr>
<tr>
<td>Thomas S. Buchanan</td>
<td>$8,647,802</td>
</tr>
<tr>
<td>Joseph A. Buckwalter</td>
<td>$7,314,345</td>
</tr>
<tr>
<td>Charles L. Kimmel</td>
<td>$6,927,283</td>
</tr>
<tr>
<td>Martin K. Loz</td>
<td>$6,407,797</td>
</tr>
<tr>
<td>Farshid Guliak</td>
<td>$6,137,506</td>
</tr>
<tr>
<td>Linda J. Sandell</td>
<td>$4,911,197</td>
</tr>
<tr>
<td>Mary B. Golding</td>
<td>$4,822,011</td>
</tr>
<tr>
<td>Regina J. O'Keefe</td>
<td>$4,508,149</td>
</tr>
</tbody>
</table>

Total Grants: 939
Active Grants: 939
Total Funding: $316,256,571
Unique Organizations: 172
Unique PIs/Researchers: 384
Innovative Technology

Our technology achieves simple, effective and functional delivery of RNAi for research, diagnosis and clinical treatment.

1. Released small RNAs to regulate gene expression

2. RNAi therapy to treat arthritis, chondrodysplasia, cancer, etc.

3. Cell nucleus

As to regulate gene expression.
Innova5ive Technology

Intra-articular joint: with nanopieces, fluorescent DNA/RNA-based molecular beacon is successfully and effectively delivered into chondrocytes in mouse cartilage.

Delivery of red fluorescence DNA/RNA beacon into cartilage cells

H&E staining to illustrate the hyaline cartilage and subchondral bone
Chondrosarcoma

- Primary bone tumor
- Poor survival for grade II and III tumors
- Resistant to chemotherapy
- Morbidity related to pulmonary metastases

Antagomir Delivery

Beacon  RNTs-Beacon

miR-181a RNA level (normalized to U17a)

Green-FAM  Phase contract

Green-FAM  Phase contract
Clinical Faculty and Resident Research

• All Residents are required to do a minimum of one research project
  • All 3rd Year Residents work with a member of the Senior Research Faculty to mentor their projects
  • Research projects are reviewed by the Chief of Orthopaedics and Senior Research Faculty
  • Chief allocates funding
  • Projects are presented in the 5th Year of the program

• Faculty requests for funding meet with the Chief and Senior Research Faculty
  • Funding is allocated by the Chief based on cost and potential
  • Since funding comes from the Department of Orthopaedics – the Dean and President of the Health System are not involved in the decision making process

• The following example shows how Dr. Chen’s (Senior Research Faculty) research is used to propagate research funding to Dr. Terek (Clinical Faculty)
Clinical Faculty

• Brigham and Women’s Physician Organization employs all Clinical Faculty. BWH and BWPO are members of a larger hospital and physician network called Partners HealthCare.

• Academic Practice Model
  • Harvard University – teaching affiliation for Resident Education

• Clinical Faculty pay a Department Development Fund tax
  • 5% of collections
  • 1% Mission based incentive compensation program

• Chief of the Department of Orthopaedic Surgery reports to the President of Brigham and Women’s Hospital.
  • Chief controls allocation of DDF Tax to support clinical, academic and research initiatives of the department.

• Clinical Faculty fund own research assistants and are incentivized to conduct research through MBICP and Harvard promotion process.
Research Faculty

• Base Salary NIH cap – currently $185,100
• Base Salary to start is typically $120,000 paid out of start up package.
• Start up packages funded via Hospital and Department.
• 2-5 year process for grant funding.
• Junior Faculty typically $60-100K
• Department provides statistical analysis, grant management, and administrative support.
• Department provides bridge funding at the Chief’s discretion.
• Labs will be consolidated to new clinical and research building starting October.