



Creating a Cancer-free World. One Person, One Discovery at a Time.

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WEXNER MEDICAL CENTER

Maintaining a Clinical Research Practice at Academic Cancer Centers

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Conflict of Interest

None

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Outline

1. Defining various areas of academic research
2. Maintaining a research practice at an academic cancer center
3. Navigating salary structures in academia
4. Metrics for measuring clinical research activities

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search



The diagram illustrates a DNA double helix structure. The top strand is oriented 5' to 3' from left to right, and the bottom strand is oriented 3' to 5' from left to right. The base pairing is as follows:

- Top strand: A T T A C C G G C A A T C
- Bottom strand: T A A T G G C T T A C G G C A A T C

A red oval highlights a mutation site on the top strand, where the sequence 'A T T' is replaced by 'A T C'. The bottom strand remains unchanged. The diagram also shows the sugar-phosphate backbone and the overall helical twist of the DNA molecule.

Areas of Research

- Epidemiology - Population Science
- Prevention and Implementation Science
- Basic Biological and Cellular Research
- Development of Therapeutic Targets - Chemistry
- Clinical Cancer Research
- Public Health Research - Policies
- Quality of Care Research
- Other

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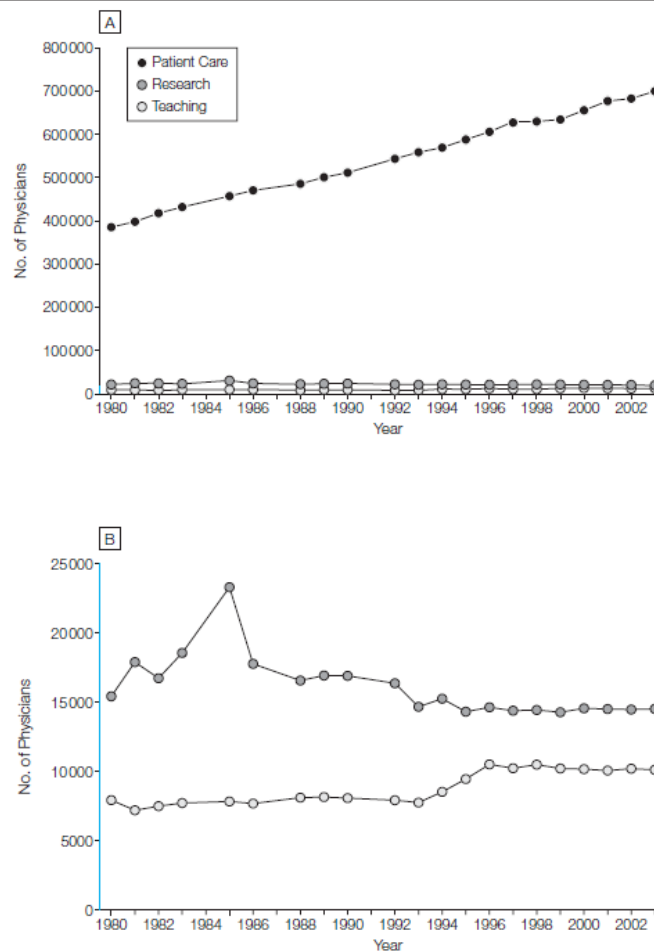
Why Do Cancer Research in your Division?

- Should research be a focus in your Division?
- Missions of Cancer Center/College/Hospital?
 - Align your goals with strategic plans of your institution
- Separates academic center from community?
- CART
- Need for physician-scientists and scholar clinicians
- Cannot agree with current therapeutic status quo, until we cure all diseases...
- US News rankings...

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The Physician Scientist – A Dying Breed?

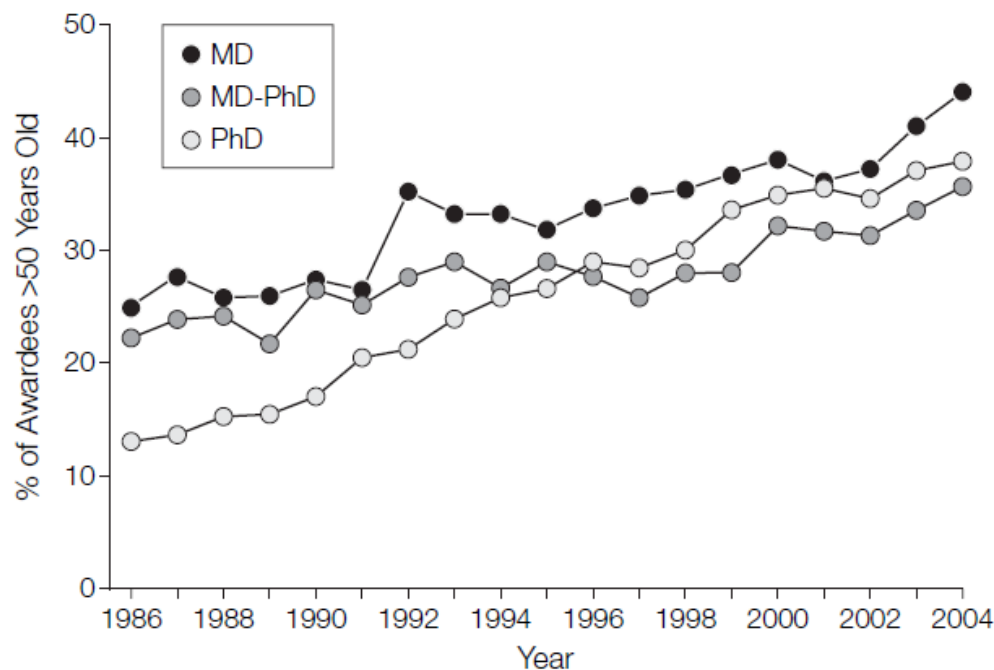
Figure 1. Composition of the Physician Workforce in the United States, 1980-2003



A, Number of physicians engaged in each of the major professional activities. B, Data for physicians engaged in research or teaching as their major professional activity is shown on an expanded scale for increased clarity. Source: American Medical Association.

Aging grant recipients

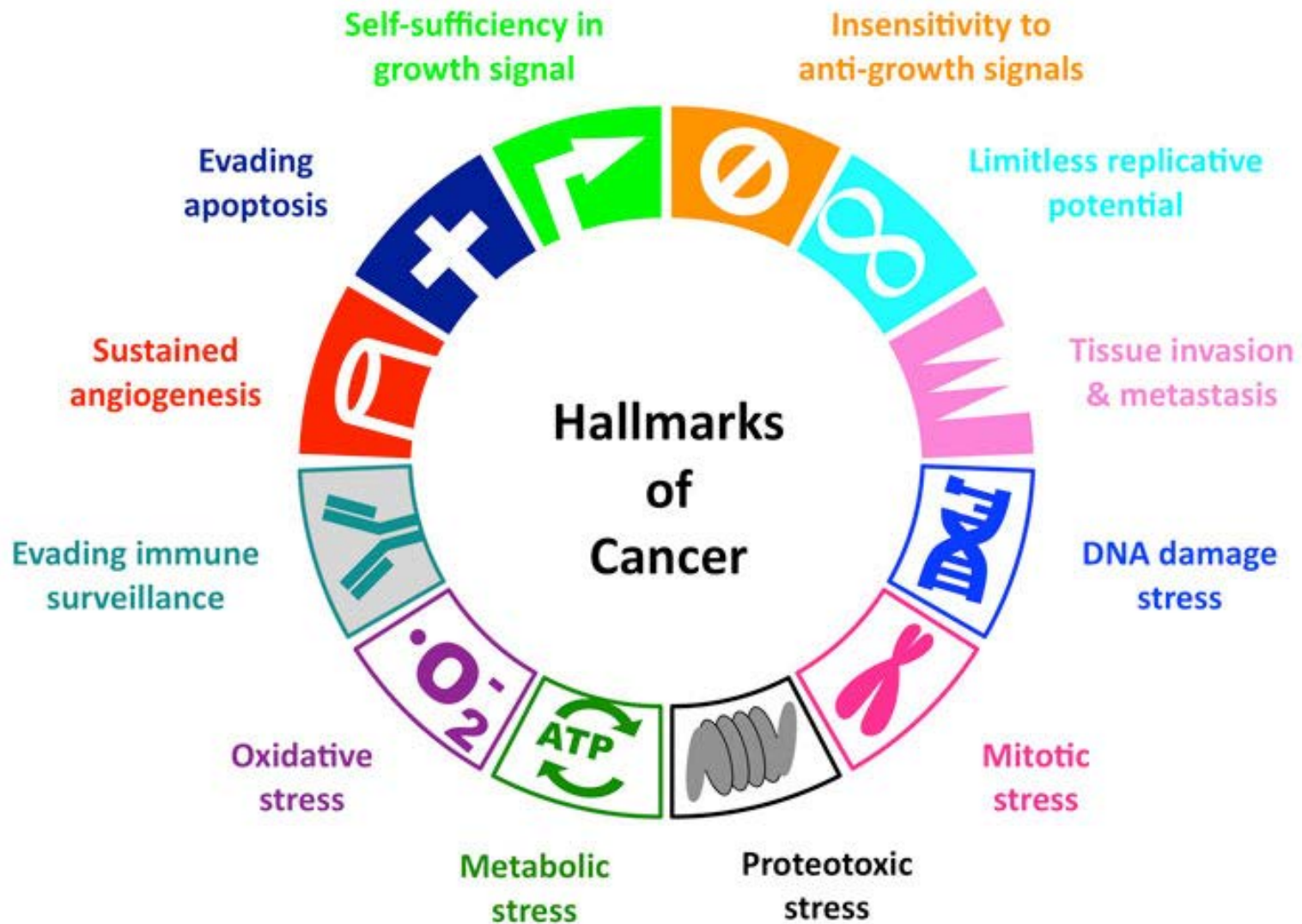
Figure 2. Aging of Funded NIH Investigators, 1985-2004



The percentage of total research project grant awards awarded to investigators older than 50 years is shown for each degree type. For this and all other figures, MDs include individuals with an MD degree alone plus all individuals with an MD plus another professional degree other than PhD. Similarly, MD-PhDs include all individuals with these 2 degrees plus any other professional degrees. Source: National Institutes of Health (NIH).

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Research Biology Network



Research Tools

- Laboratory/grant-based
 - In vitro
 - In vivo (IACUC)
 - Genomics, proteomics, microbiome, microenvironment...
 - Grant applications
 - Collaborations – Team Science
- Clinic/contract-based
 - Phase 0 to 4 studies (IRB)
 - Translational research
 - Need for imaging, pathology, biostatistics, shared resources
 - Regulatory/FDA/NCI
 - Databases
 - Tumor banking
 - Contract negotiations
 - Collaborations – Team Science
- Epidemiology/grant-based
 - Databases
 - Studies
 - Collaborations – Team Science

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AACI Survey of Cancer Centers

- **For faculty engaged in clinical research, what are the most important expectations? (*In order of importance*)**
 - Accrual of patients to clinical trials – **Easiest/credits?**
 - Development of investigator-initiated trials - **Difficult**
 - Peer-reviewed publications (co-author) – **Difficult/credits?**
 - PI on extramural grants and contracts - **Difficult**

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research

The image displays a circular genomic visualization, likely representing a genome browser or a specialized analysis tool. The visualization is composed of several concentric tracks. The outermost tracks are labeled 'Seq1', 'Seq2', 'Seq11', and 'Seq12', showing sequence alignment or coverage data. The inner tracks show gene models with exons and introns. A large central track displays a complex signal or profile, possibly a gene expression or regulatory signal. The word 'research' is overlaid in large red letters, indicating the scientific nature of the data.



Diagram illustrating a DNA double helix structure. The top strand (coding strand) is 5'-ATG CCG GAT TAC GGC CAA ATC-3'. The bottom strand (template strand) is 3'-TAC GGC CAA ATC-3'. A red box highlights a mutation in the top strand where the sequence 'TAC' is changed to 'TAA'. Below the strands, the corresponding mRNA sequence is shown: 5'-AUG CCG GAT TAC GGC CAA ATC-3'. The mutation in the DNA results in a premature stop codon (TAA) in the mRNA.

Research is transdisciplinary

You need a team
and not a small one...



Scientific Approach

- Correct hypothesis and endpoints
- Necessary
- Rigorous
- Ethical
- Need to complete your studies to obtain the answer
- Need to communicate results

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Know the landscape - Funding Sources

Various NIH grant mechanisms

- F, K, N, P, R, T, U, SPORE

Other grant mechanisms

- AYA, ASCO, AACR, ASH, DOD, foundations, support groups, local \$, lemon stand, etc...

Frankly too many for a busy physician to deal with this alone

Hire a grant specialist to survey the landscape and match opportunities

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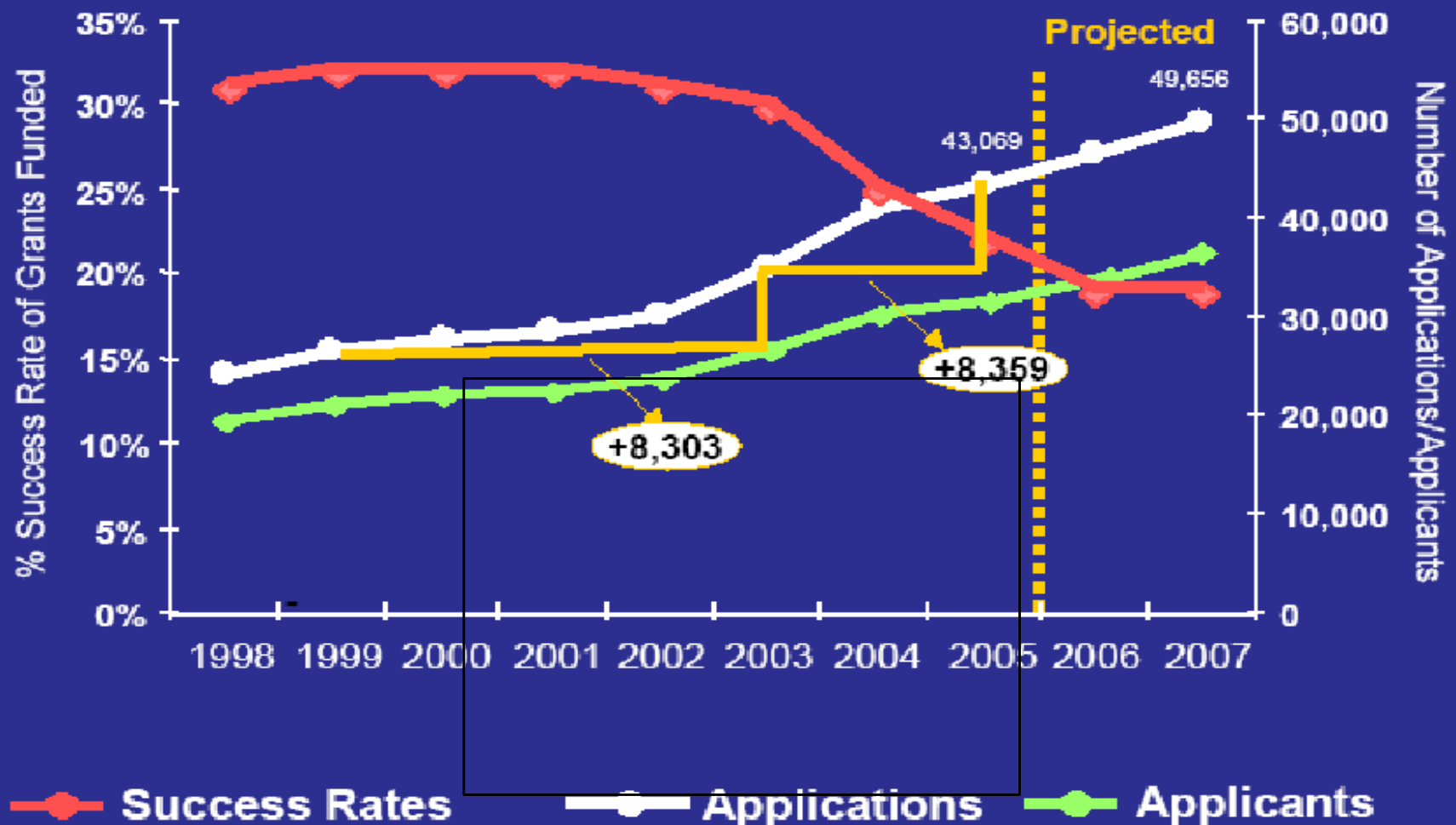
Hurdles to Research Implementation

- Funding rate – Not improving
- Lack of \$\$ (Cost share is required for NIH \$)
- Counting sponsored research contracts?
- CART and % effort complexity
- Competing activities – Lack of time
- Measure of outcomes/effort
- Access to all needed elements?

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New Grant Applications, Applicants and Success Rates

During and After Doubling Period



NCI Funding rates

- Total number of submissions NCI 2016: About 18,500
- 2019 Success rate is ~8%



Table 2: All Competing Research Project Grants

	FY 2013		FY 2014		FY 2015		FY 2016	
	Funded	Success Rate	Funded	Success Rate	Funded	Success Rate	Funded	Success Rate
R01 - Unsolicited ¹	582	15%	578	15%	623	14%	650	14%
R01 RFAs	29	17%	51	13%	12	12%	45	19%
Total R01	611	15%	629	15%	635	14%	695	14%
R21 - Unsolicited	241	10%	302	12%	325	11%	260	8%
R21 RFAs	30	13%	53	13%	38	15%	35	12%
Total R21	271	11%	355	12%	363	12%	295	9%
R35	-	-	-	-	43	19%	35	20%
R03	100	15%	93	15%	67	12%	48	10%
Other RFAs ²	23	21%	35	15%	34	11%	62	22%
Other RPGs ³	90	20%	95	19%	94	14%	95	11%
Total Competing RPGs:	1,095	14%	1,207	14%	1,236	13%	1,230	12%

The number of R21 applications may decrease in FY 2017, as NCI no longer has an R21 omnibus FOA and does not accept unsolicited R21s.

¹ Funded R01s include competing revisions.

² Other RFAs include UM1, R33, U01 and UH2.

³ Other RPGs include DP2, P01, R00, R15, R37, R50, R56, U01, U19, UH2, UM1.

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Solutions

- Division/Department Chair Package
 - Negotiations!! Consider re-negotiations, if you deliver outcomes successfully
 - Use the package
 - Negotiate recurrent incomes
 - Share for the greater good of the Division
 - Develop metrics of success
 - Help enhance institution national stature
- Know what \$ resources will be available (CC, College, department, endowments, philanthropy, etc...)
- What other staff resources are available (cores, grant management, etc...)
- Hire Research Staff to support the research effort of the Division/Department
- Understand use of indirect costs (various model apply)
- Focus on fundable proposals

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Start-up Packages

- For basic scientists
- For clinician scholars
- For physician scientists
- For yourself
- For others
 - From 5K to 250K/year for junior recruits
 - 150K to millions for senior recruits
 - Lab space & equipment/ HR staff access
 - Request deliverables and keep faculty accountable

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Expenses

Know your expenses:

- Rent for offices
- SqF/ \$ grant amounts – lab space policy
- Clinic expenses
- Supplies/travels/other
- Dept/College taxes
- Salary expenses & bonuses
- Other expenses

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Revenues

- Need to negotiate cost-sharing and gaps between RVUs/E&M coding and actual salaries
 - ➔ Clinical enterprise support is essential
- Often need to negotiate other research support
 - ➔ Offer strong deliverables that match the mission
- Keep an eye on each faculty budget and the overall division budget – **Project manager help**

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Institutional Navigation

- You might not be a priority
- Actions and results will help put you on the map – Advocate for your division
- Remember the institutional mission/vision
- Constant collegial communications are essential
- Help support philanthropy
- No Asshole Rule (R. Sutton)

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Intramural Support

Participate in every opportunity:

- Bridge funding - any source
- Cancer Center - CCSG
- CTSA
- Cores
- Junior awards
- Institutional calls for national competition
- Intramural funding for faculty
- Other

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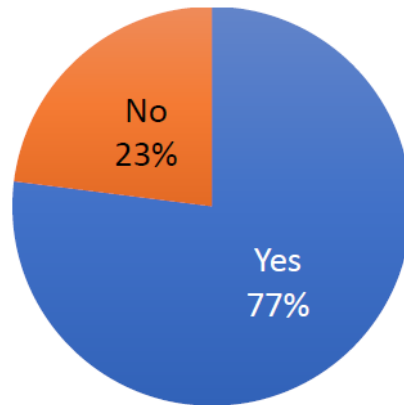


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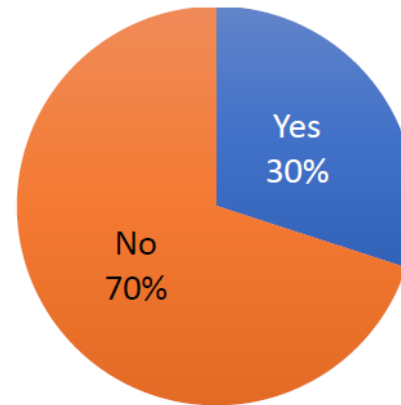
AACI Survey of Cancer Centers

Presence of Training Programs

Training For Clinical Researchers



Training For Mentors



n=56

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Navigating salary structures

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Financial Structure

- Faculty group practice
- Hospital salary structure
- Private practice
- Understand who receives revenues
- Understand what revenues are received from/by whom
- Ask for affiliation agreements
- Understand what is the institutional support
- Understand how indirects are utilized
- Engage in philanthropy

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Models of Support beyond Part B

Percentage of profit

- Pro: Increases with profit; Often generous income
- Con: Complex accounting; payer mix; legality

wRVU based

- Pro: Increases with productivity; rewards patient care
- Con: Modest income; increase in patient loads

Prorated to number of faculty

- Pro: Ensure division financial stability
- Con: Modest to no income; Remove incentives to work hard; legality

Flat Amount

- Pro: Predictable; might not give any financial cushion
- Con: Prevents growth

No support

- Pro: None
- Con: No room for research pursuits

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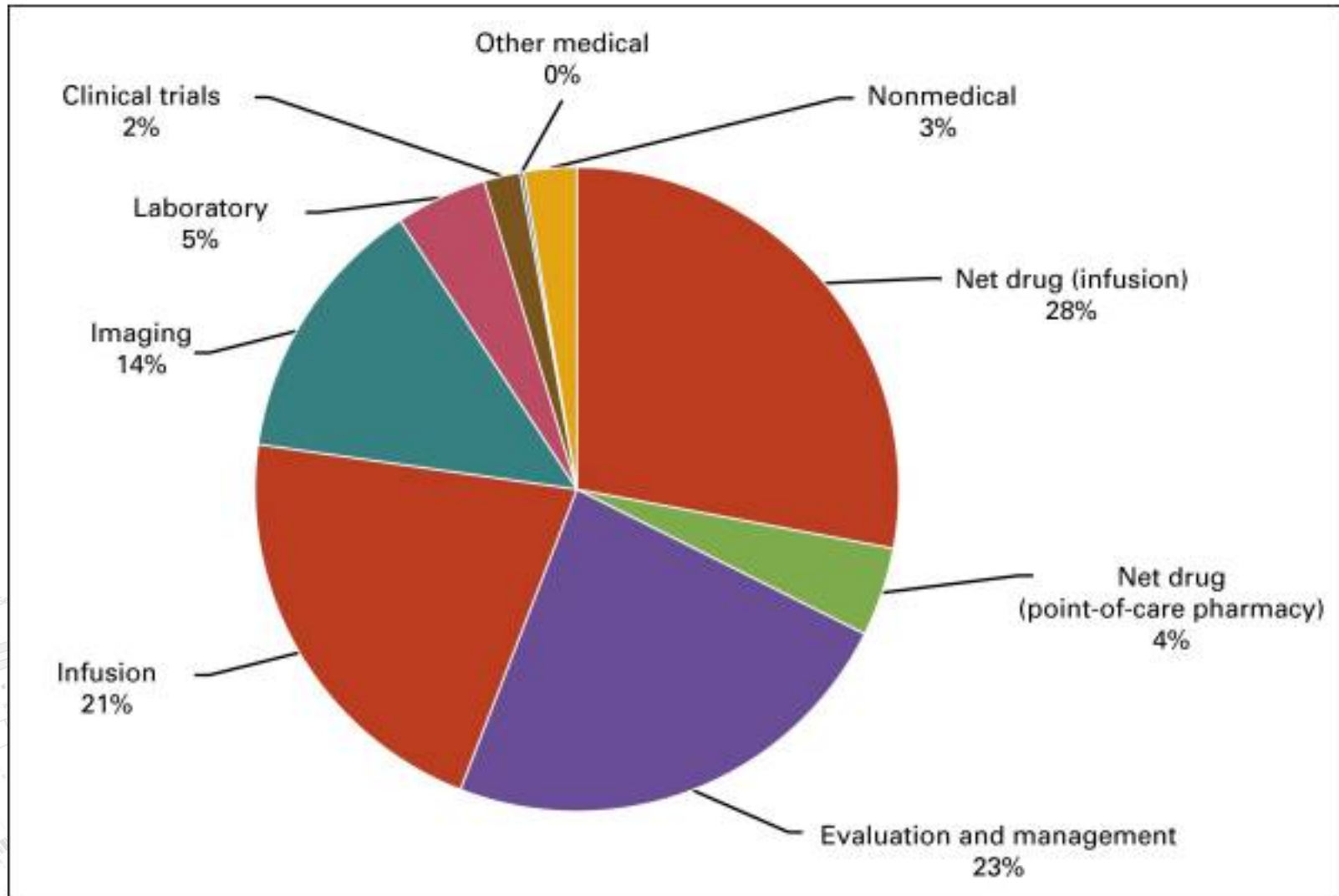
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Finances 101

- An average oncologist generates \$1.2 - \$1.6M in technical revenue (Part A)
- In private practice, E&M coding represents <25% of revenue; most revenues are from practice-owned infusion centers, radiation facilities, and laboratory/radiology owned centers
- In academic medicine, faculty are usually grouped into a faculty practice. Collections are
 - pure E&M
 - usually “taxed” by department and college
 - no technical revenue
 - additional financial return controlled by hospital budgets

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Revenue mix per standard hematology/oncology physician



Balch, et al. J Oncol Pract. 2016

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AACI Survey of Cancer Centers

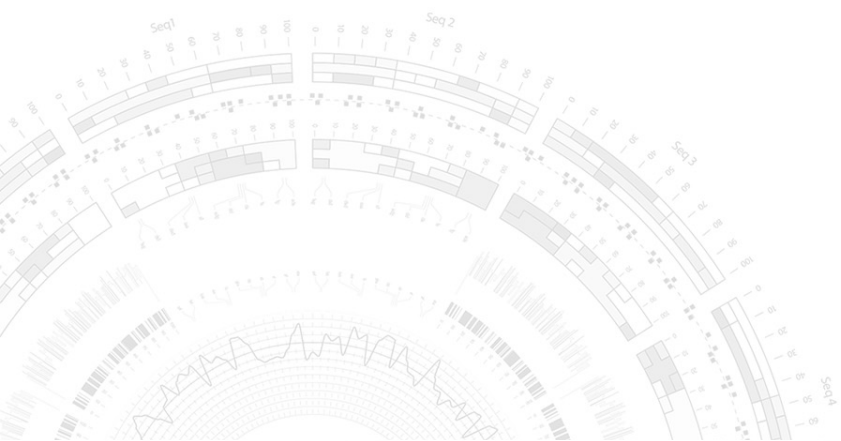
- Percentage of Time Engaged in *Direct Patient Care*

Type of duties	% Time direct patient care
Clinician - Limited Research	0-25
Clinical Investigators	26-75
Physician Scientist	70-100

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ASCO Division Chiefs Survey (14 Centers)

Type of duties	Number clinics/week Median, mean, (range)	% Time in clinical care
Clinician - Limited Research	8, 7.9, (6-9)	100
Clinical Investigators	4, 4.4, (4-6)	50-60
Physician Scientist	2, 1.5, (0-2)	10-30



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Compensation Plans

- Much in fashion
- Primary goal is to ensure equity across specialties
- Usually RVU based
- Using CART to apportionate effort
- Effort linked to employee direct revenues to salary
- Not always aligned with realities
- Usually with an incentive component for retention and work recognition

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Compensation Formula

Many different formulas to calculate \$ amount

$$\begin{array}{lcl} \text{CART:} & & \\ & + & \text{Clinical\%} \\ & + & \text{Administration\%} \\ & + & \text{Research\%} \\ & + & \text{Teaching\%} \\ & \hline & = & 100\% \end{array}$$

Clinical:

- Usually RVU based
- Two main benchmarks, MGMA and AAMC/CPSC (Vizient)
- Usually calculated in hours or RVU equivalents, not in number of patients

Administration:

- Usually linked to an amount of \$ for a directorship

Research:

- Usually linked to % effort on NIH grants, where salary is counted (federally reported)
- NIH Capped at around \$190,000 – Some cost-share, some don't

Teaching:

- Usually no \$ assigned to teaching trainees unless it is a formal course or a post-graduate directorship

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Compensation Plan - Research

- NIH funding is usually tallied
 - Non NIH funding is often not linked to salary effort
 - Plans should include formula to protect effort for clinical research
 - Usage of philanthropic funding?
- Metrics are needed

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Understanding the College/University Landscape

- If you come in a leadership position to a new place:
 - It is important to negotiate research time for you and the faculty you may hire and to request
 - \$ in package to support research (make sure it is recurrent)
 - Job descriptions and suggest edits if appropriate
 - Time to prepare for research (start-up packages)
 - Time to perform the research, even if not always funded for salary \$
- Much more difficult to negotiate if you are already in the place
 - Need to ask for a retention package, but only works if already funded
 - Interview elsewhere to scout the landscape
- Work nationally with peers
 - AACI
 - ASCO (Survey paper submitted to JOP)
 - AAMC

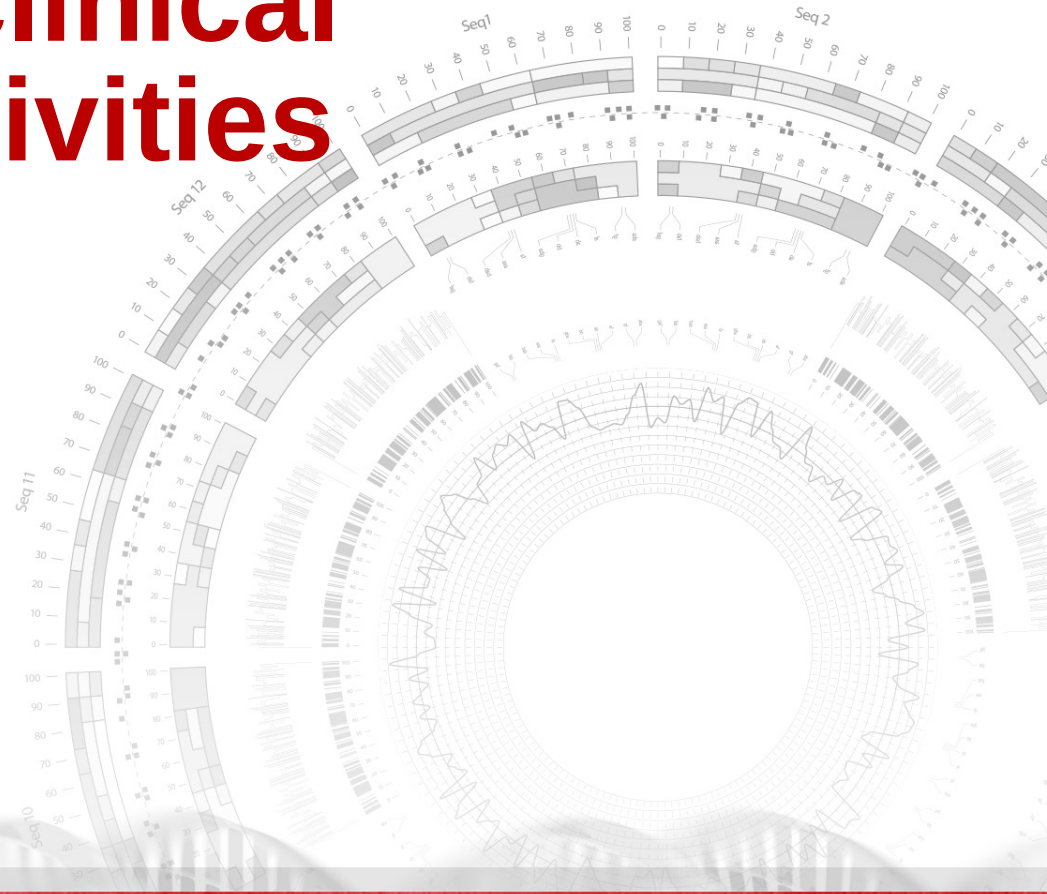
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Metrics for clinical research activities

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AACI Survey of Cancer Centers

Type of duties	% Time Clinical Research Activities
Clinician - Limited Research	0-25
Clinical Investigators	26-50
Physician Scientist	0-25



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Measuring Research Output (1)

- Grants funded (PI - MPI - Co-I)
 - Lab research
 - Epidemiology/public health research
 - Behavioral research
 - Other
- Publications
- Clinical research contracts
- Guidelines through specialty societies
- Pathway implementation
- National and international presentations
- Other tangible work

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Measuring Research Output (2)

Performing research activities $\neq$ Achieving results

- Examples:
 - 1/11 NCI grant submission is funded
 - 1/10 Investigator initiated trial (IIT) is funded by outside source
- Return on investment (ROI) for these examples:
 - Personal:
 - 15% salary coverage for NCI grant (=\$45K / \$300K salary)
 - \$0 to salary, perhaps a few RVUs
 - Institutional:
 - 250-400K/year
 - \$10-25K/patient accrued

Hence, metrics are needed to measure ROI (output/effort)

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Example of Metrics

Percent effort that should be allocated beyond tangible \$

- Grant effort should be measured
 - Number of submissions
 - Awards without salary
- Clinical research should be measured
 - Accruals to any trials
 - Number of protocols as PI (1572 responsibility)
 - Weighing for sponsors: IIT > industry > NCTN
 - Presentations at national/international conferences
- Publications
 - Role on publication is paramount
 - Impact of publication (journal IF, citations)
 - Research metrics (h-index, Publons, i10-index, others)

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CONCLUSIONS

- There is no simple answer
- High variability among cancer centers
- Negotiation and advocacy paramount
- Embracing mission and vision of the institution
- Aligning strategic planning
- Delivering high quality research results
- Importance of transparency and accountability

Never give up!

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We will now take questions for our presenters. Please use the question box on the lower right to submit a question.
Questions will be answered as time permits.



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