Today's Presentation

NORTHERN NEW ENGLAND CLINICAL & TRANSLATIONAL RESEARCH NETWORK

# SHOW ME THE MONEY!

*Funding opportunities across the spectrum: societies, foundations, big pharma, small biotech, and the NIH*

Michaela Reagan PhD,
MaineHealth Institute for Research

Project ECHO®

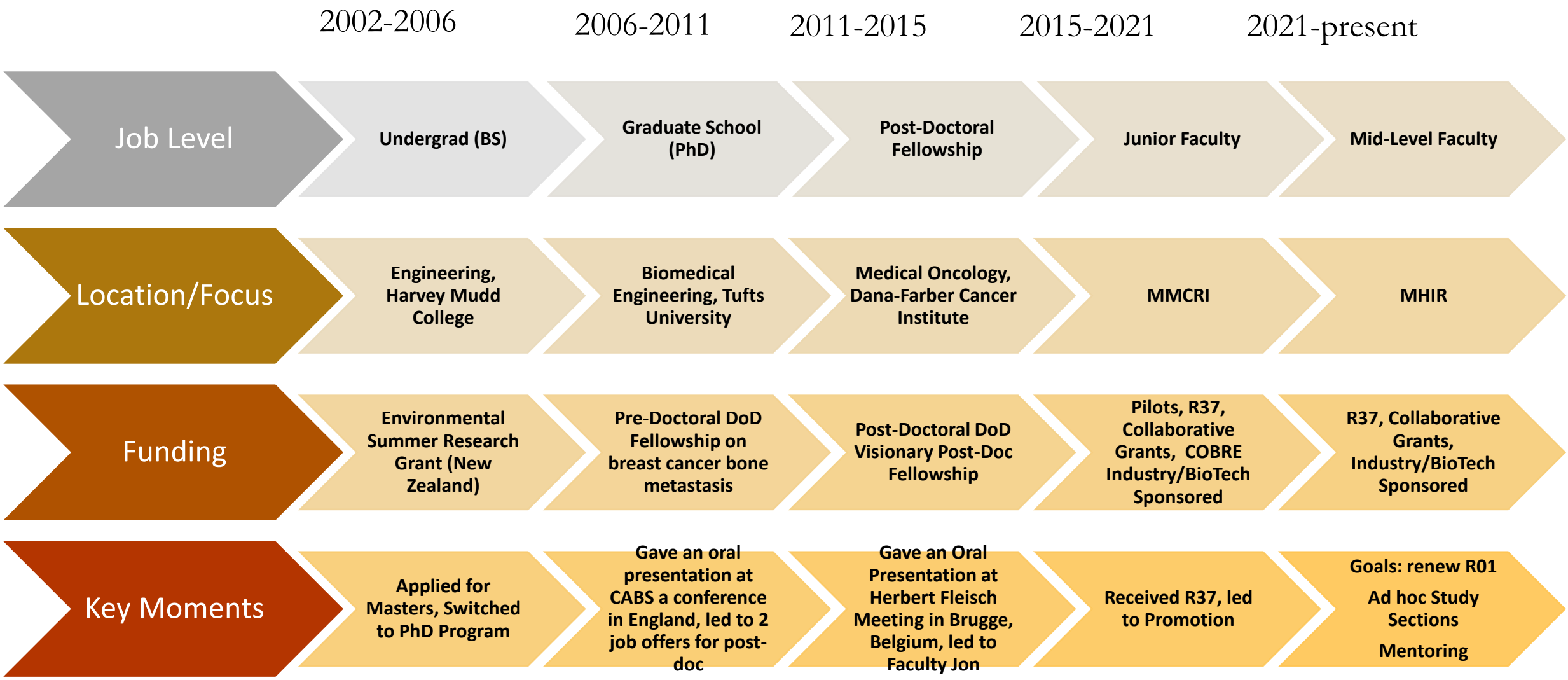
# SHOW ME THE MONEY!

## *Funding opportunities from easiest (supposedly) to hardest to get*

Michaela Reagan, PhD

MaineHealth Institute for Research

Feb 22, 2023


2002-2006
2006-2011
2011-2015
2015-2021
2021-present
Job Level
Undergrad (BS)
Graduate School (PhD)
Post-Doctoral Fellowship
Junior Faculty
Mid-Level Faculty
Location/Focus
Engineering, Harvey Mudd College
Biomedical Engineering, Tufts University
Medical Oncology, Dana-Farber Cancer Institute
MMCRI
MHIR
Funding
Environmental Summer Research Grant (New Zealand)
Pre-Doctoral DoD Fellowship on breast cancer bone metastasis
Post-Doctoral DoD Visionary Post-Doc Fellowship
Pilots, R37, Collaborative Grants, COBRE Industry/BioTech Sponsored
R37, Collaborative Grants, Industry/BioTech Sponsored
Key Moments
Applied for Masters, Switched to PhD Program
Gave an oral presentation at CABS a conference in England, led to 2 job offers for post-doc
Gave an Oral Presentation at Herbert Fleisch Meeting in Brugge, Belgium, led to Faculty Jon
Received R37, led to Promotion
Goals: renew R01
Ad hoc Study Sections
Mentoring

# KEYS TO SUCCESS

Publications! (Co-authorship can be very useful, journal IF matters, but it isn't everything)

Diversify at the beginning; learn all you can! Grades still matter (grants for post-docs)

Find a supportive, productive PI who you like. Build relationships.

Go to conferences

Take risks- many grants don't get funded, and papers get rejected

Resiliency, open-mindedness, support system, optimism, taking feedback well.

Publish work from small to big

Build a strong team

Don't give up



# COMMON “MISTAKES”

As a junior faculty- not spending enough time evaluating new members, developing supports as a junior faculty, having co-mentors for my students.

Being too optimistic

Being “too ambitious” with new staff

Not being focused/never saying no

The “Motherhood Penalty”

Not shooting for high enough impact journals as a PI

Not publishing. Perfectionism.

Falling for “imposter syndrome” – you are better than you feel ☺

# PRE-DOCTORAL STAGE GRANT OPTIONS (USA)

NIH F31, ~$25K stipend, 60% of tuition and fees up to 16k/year + $4,200 for travel, supplies, health insurance, equipment.

Citizenship or green card is needed at the time of award issuance.

Cover Salary – need mentor and training plans.

Up to 5 years. Goes to study section, council. Have a P.O.

DoD Pre-doc fellowships

https://www.grants.gov/web/grants/search-grants.html

T32/T35 Program grants

Predoctoral to Postdoctoral Fellow Transition Award (F99/K00)

# POST-DOCTORAL STAGE GRANT OPTIONS (USA)

NIH F32

Citizenship or green card is needed at the time of award issuance.

3 years maximum, non-renewable.

Diversity Supplements to R01s/R grants for pre-docs and post-docs

DoD Post-Doc Fellowship

Department of Defense Congressionally Directed Medical Research Programs.

https://www.grants.gov/web/grants/search-grants.html

Individuals, regardless of ethnicity, nationality, or citizenship status, may apply as long as they are employed by, or affiliated with, an eligible institution.

# FOUNDATIONS: eg. AMERICAN CANCER SOCIETY

Mentored or non-mentored grants.

Applicants for the Clinician Scientist Development Grant and Postdoctoral Fellowships must be, at the time of application, US citizens or permanent residents. There are no citizenship requirements for any other grant mechanisms.

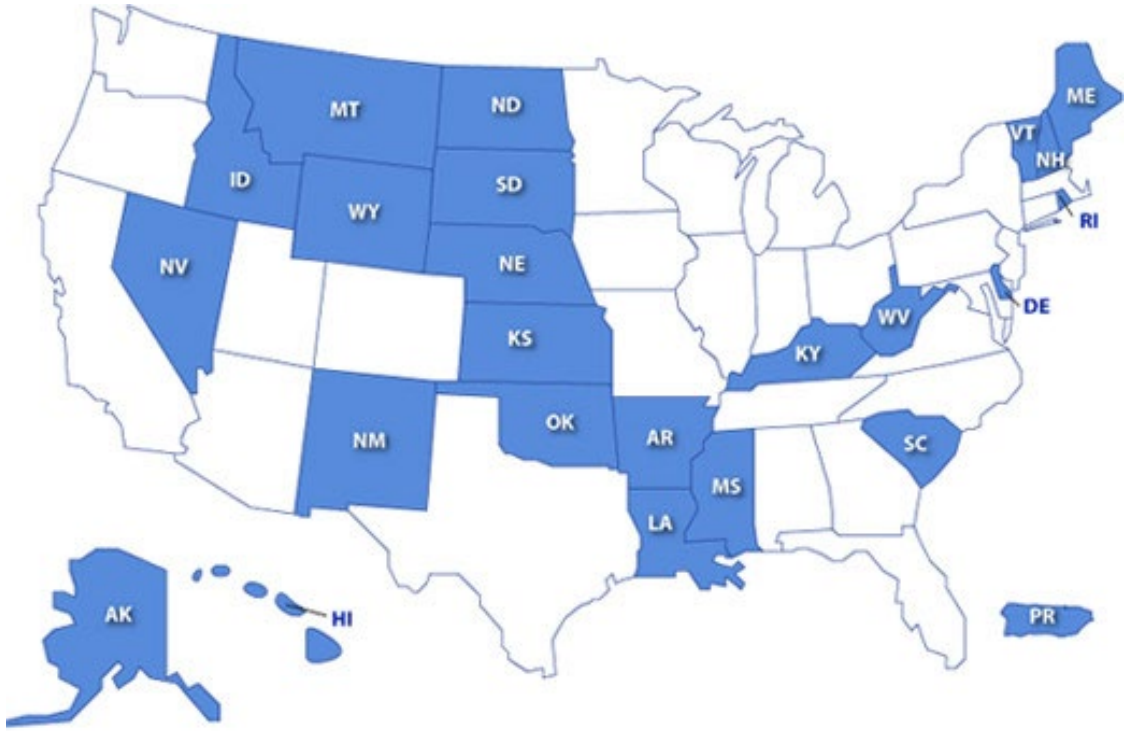
Have a P.O., goes to Study Section.

Currently hit badly from Covid-19.

**Research Scholar Grant** (RSG): Independent investigators within first six years of independent career, within a total of 12 years from the award of the terminal degree, and with no more than one current R01[-like] grant.

Within eight years of independent career for clinician scientists who remain active in clinical care.

# OTHER US GOVERNMENT FUNDED GRANTS




- Institutional Development Award (*IDeA*)
  - COBRE Project Leader recruited as new faculty
- U54, P30s

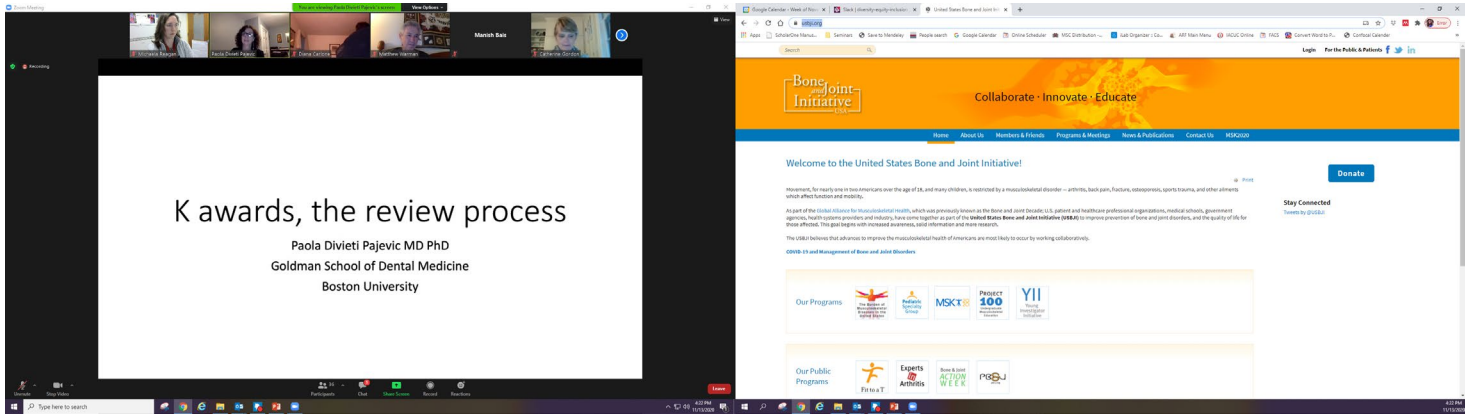
https://www.nigms.nih.gov/Research/DRCB/IDeA/Pages/default.aspxpost-doc

# OTHER FOUNDATIONS AND SOCIETIES

- ASBMR's Rising Star
- Societies (American Heart Association, AHA, AACR)
- Foundations, ASH Scholars
- Pilots: Dana-Farber, Dartmouth ACS, CTR, COBRE Pilots, Mass General Hospital, UNE COBRE (under review)
- Veteran's Affairs (the VA)
  - Can apply if you are not a member of the VA yet.
  - Goes to study section, reviewed by peers, scored, feedback given
- https://www.kennedykrieger.org/research/for-research-professionals/foundation-grant-opportunitiesen.
- Department of Defense

# GET FEEDBACK ON YOUR GRANT!

- MHIR has internal study section.
- www.usbji.org
- US Bone and Joint Initiative program



| Dates | Grant Title | PI Name | Funding Source | Grant Number | Amount | Role |
|---|---|---|---|---|---|---|
| 2010-13 | 3-D CAM-Based Breast Cancer Osteotropism Disease Model | Michaela Reagan | Department of Defense Predoctoral Traineeship Award, CDMRP, Breast Cancer Research Program | W81XWH-10-1-0086 | $50,893 | PI |
| 2013-15 | Reciprocal Interactions between Multiple Myeloma Cells and Osteoprogenitor Cells Affect Bone Formation and Tumor Growth | Michaela Reagan | Department of Defense Visionary Postdoctoral Fellowship Award CDMRP's Peer Reviewed Cancer Research Program | CA120025 | $415,470 | PI |
| 2014-15 | The Role of Adipocytes in Multiple Myeloma Disease Progression | Clifford Rosen | NIH/NIGMS | P30GM106391 | $45,000 | Co-PI |
| 2015-16 | BioPact Sponsored Research Agreement Continuation. | Michaela Reagan | BioPact ™, Austin, TX | N/A | $93,875 | PI |
| 2015-19 | Interdisciplinary study of marrow adiposity, metabolism and bone remodeling. | Clifford Rosen | NIH/NIDDK R24 | DK092759-01 | 5% effort | Co-PI |
| 2016-17 | The role of glycosylation in multiple myeloma | Michael O'Dwyer | National University College of Ireland in Galway | N/A | $123,929 | Subcontract PI |
| 2021-2022 | Testing Melflufen Influences on Myeloma-Induced Bone Disease and Normal Bone Properties, and Effects on normal and myeloma-associated MSCs | Michaela Reagan | Oncopeptides Inc. (Contract) | N/A | $42,000 (directs+indirects) | PI |
| 2021-present | Testing MetAP2 inhibitor, SDX-7320, Influences on Multiple Myeloma (MM) Progression and Tumor Cell Proliferation and Cell Death In vitro | Michaela Reagan | SynDevRx (Contract) | N/A | $35,226 (directs + indirects) Year 1<br><br>$70,820 (directs + 30% indirects rate) Year 2 | PI |

| 2016-17 | Modeling the Effects of Bone Aging on Marrow Adipocyte Progenitors in an Osteocalcin-Cre/inducible Diphtheria Toxin Receptor (OcnCre/iDTR) Mouse Model | Clifford Rosen, Michaela Reagan | NIH/NIGMS | P30GM106391 | $40,000 | Co-PI |
|---|---|---|---|---|---|---|
| 2016-17 | The roles of sialyltransferases and sialic acids in Natural Killer cell homing to bone marrow. | Michaela Reagan | ONKimmune Inc. | N/A | $49,711 | PI |
| 2016-17 | BioPact Sponsored Research Agreement Continuation | Michaela Reagan | BioPact ™, Austin, TX | N/A | $224,664 | PI |
| 2016-18 | The roles of sialyltransferases and sialic acids in Natural Killer cell homing to bone marrow | Michaela Reagan | oNKimmune Inc. | N/A | $48,411 | PI |
| 2017-18 | BioPact Sponsored Research Agreement Continuation | Michaela Reagan | BioPact ™, Austin, TX | N/A | $179,795 | PI |
| 2017-18 | Tissue Engineered Tumor Modeling of Adipose-Driven Drug Resistance in Myeloma | Michaela Reagan | American Cancer Society Research Grant | IRG-16-191-33 | $30,000 | PI |
| 2017-18 | Targeting Sclerostin in Multiple Myeloma-induced Bone Disease. | Michaela Reagan | NIAMS sponsored Pilot from MGH's Center for Skeletal Research | P30AR066261 | $30,000 directs total | PI |
| 2017-18 | Obesity, body weight patterns and physiologic mechanisms of myelomagenesis: a murine model investigation | Tim Rebbeck | DFCI Internal Medical Oncology Translational Grant | N/A | $40,000 directs total | Sub-contract PI |

| 2017-19 | Novel mechanisms of osteocyte control of marrow adiposity. | Lucy Liaw | NIGMS | P20GM121301 | $273,000/year | PI |
|---|---|---|---|---|---|---|
| 2018-20 | Assessment of bone marrow adiposity in mice treated with anti-sclerostin antibody Scl-Ab | Michaela Reagan | UCB Biopharma Research Contract | N/A | $60,000 directs total | PI |
| 2019-2024 | Kane Foundation Cancer Research and Education Grant | Michaela Reagan | Linda Tallen and David Paul Kane Educational Research Foundation | N/A- philanthropy | $60,000 directs/year | PI |
| 2019-20 | Lipid Metabolism-driven Drug Resistance in Multiple Myeloma | Connor Murphy | NIGMS/University of Maine institutional training grant | 1T32GM132006-01 | ~$35,000 (1 year stipend) | Mentor |
| 2019-23 | Marrow Niche Modulation of Myeloma Progression | Michaela Reagan | American Cancer Society | RSG-19-037-01-LIB | $660,000 total directs | PI |
| 2020-21 | Myeloma-modified adipocytes exhibit a senescent-associated secretory phenotype | Michaela Reagan | NIGMS/ Northern New England, CTR Pilot grant | N/A | $30,000 directs | PI |
| 2020-25 (non-competitive renewal until 2027) | Defining the Roles of Bone Marrow Adipocyte and FABP4/5 Signaling in Multiple Myeloma Drug Resistance | Michaela Reagan | NIH/NCI | R37CA245330 MERIT | $1,143,750 directs | PI |

# OTHER FUNDING FOR THE LAB

- Michelle (BIOMaine Seed Grant)

| 2021-2024 | Lipid Metabolism-driven Drug Resistance in Multiple Myeloma | Connor Murphy | NIH/NCI F31 | F31CA257695-01 | ~92,000 (3 years stipend) | Mentor |
|---|---|---|---|---|---|---|
| 2022-27 | Research Specialist Support for Defining the Roles of Bone Marrow Adipocytes and FABP4/5 Signaling in Multiple Myeloma Drug Resistance | Heather Campbell Fairfield | NCI/NIH | R50 CA265331-01 (Scored impact score of 10) | $500k (Directs + Indirects) | Unit Director |


AMERICAN SOCIETY OF HEMATOLOGY
#ASH22


Oxbryta
(voxelotor)
Pfizer

# Questions?

# Major Goals and Projects

- Connor: ACSLs in Myeloma
- Heather: New RNAseq data with OPM2; Testing/Validating HL-60s as HL-60s (Cancer Res, Connor's paper, other data we have); Obesity in MM original research paper; FABP KO work
- Haylee: FABP4/5- KO mice: Controls and with Myeloma
- Patricia: Adipocytes effects on MM: Conditioned media, etc.
- Michelle: Lipidomic analysis of MM cells with FABP inhibitors; FABP in vivo "negative data" and subQ paper; SubQ tumor experiment (30 mice)
- Kait: Immune cell phenotyping (flow cytometry) for obesity/immune work
- Under Review: eLife paper on FABPs and MM, Review on obesity and MM.
- Side: CoMMPass CD139- Genetech/Habibi; Dr Bergsagel- Obesity data, Ray Commenzo: Tufts MM biobank.
- LOIs: Obesity-Immune System- Myeloma. scRNAseq