GRADUATE PROGRAM IN CELLULAR AND MOLECULAR BIOLOGY

APPENDIX 3: Sample Academic Plans Based on Interest

EXAMPLE 1. FOR A CMB STUDENT INTERESTED IN **CANCER BIOLOGY**

First year (PIBS)		Second year (CMB)
FALL TERM PIBS 503 – Research skills / Research responsibility and Ethics (1 cr) PIBS 600 – Research Rotation (variable cr) CMB 850 – CMB student seminar (optional, 1 cr) CMB 630 – CMB Short Course (optional, 1 cr) BCHM 550 – Macromolecular Structure & Function (3 cr) HumGen 541 – Molecular genetics (3 cr) Or BCHM 550 – Macromolecular Structure & Function (3 cr) CDB 530 – Cell Biol (3 cr)		FALL TERM CMB 850 – Student seminar (1 cr) CMB 630 – Advanced topics in Molecular Biology (1 cr) CMB 990 - Precandidate dissertation research (variable cr) Pharm 502 – Grant Writing MI/Path 553 – Molecular Biology of Cancer (3 cr) CDB 530 – Cell Biology (3 cr) or MI/Path 553 – Molecular Biology of Cancer (3 cr) Physiol/BCHM 591 – Special Topics in Signal Transduction (2cr) Or Pharm 612 – Antimicrobial & cancer pharmacol (2 cr)
WINTER TERM PIBS 600 – Research Rotation (variable cr) CMB 850 – CMB student seminar (optional, 1 cr) CMB 630 – CMB Short Course (optional, 1 cr) PIBS 504 – Rigor & Reproducibility Path 581 – Tiss, Cell and Molec Basis of Disease (3 cr) Bioinf 525 – Foundations in Bioinformatics & Systems Biology (3 cr) or Bioinf 551 – Proteome Informatics (3 cr)		WINTER TERM CMB 850 – Student seminar (1 cr) CMB 630 – Advanced topics in Molecular Biology (1 cr) CMB 990 - Precandidate dissertation research (variable cr) BCHM 640 – Post-transcriptional mechanisms (2 cr) CanBiol 554 – Cancer Pathogenesis & Treatment (4 cr) or Physiol/HumGen 555 – Integrative Genomics (3 cr)

Shaded areas denote PIBS and CMB courses
CMB 630 – Short Course is formally titled: Advanced Topics in Molecular Biology.

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APPENDIX 3: Sample Academic Plans Based on Interest (continued)

EXAMPLE 2. FOR A CMB STUDENT INTERESTED IN **STEM CELLS & DEVELOPMENTAL BIOLOGY**

First year (PIBS)		Second year (CMB)
FALL TERM PIBS 501/503 – Research skills / Research responsibility & Ethics (1 cr) PIBS 600 – Research Rotation (variable cr) CMB 850 – CMB student seminar (optional, 1 cr) CMB 630 – CMB Short Course (optional, 1 cr) CDB 530 – Cell Biology (3 cr) BCHM 550 – Macromolecular Structure & Function (3 cr)		FALL TERM CMB 850 – Student seminar (1 cr) CMB 630 – CMB Short Course (optional, 1 cr) CMB 990 - Precandidate dissertation research (variable cr) Pharm 502 – Grant Writing HumGen 541 – Molecular Genetics (3 cr) CDB 680 – Organogenesis of complex tissues (3 cr) or MCDB 614 – Experimental Models in Molecular, Cellular & Developmental Biology (3 cr)
WINTER TERM PIBS 600 – Research Rotation (variable cr) CMB 850 – CMB student seminar (optional, 1 cr) CMB 630 – CMB Short Course (optional, 1 cr) PIBS 504 – Rigor & Reproducibility CDB 580 – Principles of Development (3 cr) Or CDB 550 – Histology (4 cr) BCHM 645 – Advanced Topics in Protein Trafficking (3 cr)		WINTER TERM CMB 850 – Student seminar (1 cr) CMB 630 – Advanced topics in Molecular Biology (1 cr) CMB 990 - Precandidate dissertation research (variable cr) Physiol/BCHM 576 – Signal transduction (1 cr) Bioinf 525 – Foundations in Bioinformatics & Systems Biology (3 cr)

Shaded areas denote PIBS and CMB courses
CMB 630 – Short Course is formally titled “Advanced Topics in Molecular Biology”

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APPENDIX 3: Sample Academic Plans Based on Interest (continued)

EXAMPLE 3. FOR A CMB STUDENT INTERESTED IN **GENETIC/EPIGENETIC MECHANISMS**

First year (PIBS)		Second year (CMB)
FALL TERM PIBS 503 – Research skills / Research responsibility and Ethics (1 cr) PIBS 600 – Research Rotation (variable cr) CMB 850 – CMB student seminar (optional, 1 cr) CMB 630 – CMB Short Course (optional, 1 cr) HumGen 541 – Molecular Genetics (3 cr) BCHM 550 – Macromolecular Structure & Function (3 cr) or ChemBio 501 – Chemical Biology		FALL TERM CMB 850 – Student seminar (1 cr) CMB 630 – Advanced topics in Molecular Biology (1 cr) CMB 990 - Precandidate dissertation research (variable cr) Pharm 502 – Grant Writing CDB 530 – Cell Biology (3 cr) Physiol/BCHM 591 – Special Topics in Signal Transduction (2 cr)
WINTER TERM PIBS 600 – Research Rotation (variable cr) CMB 850 – CMB student seminar (optional, 1 cr) CMB 630 – CMB Short Course (optional, 1 cr) PIBS 504 – Rigor & Reproducibility BCHM 650 – Mechanisms of Eukaryotic Gene Expression (3 cr) Bioinf 527 – Introduction to Bioinformatics & Computational Biol (4 cr) or Bioinf 545 – Data Analysis in Molecular Biology (3 cr)		WINTER TERM CMB 850 – Student seminar (1 cr) CMB 630 – CMB Short Course (1 cr) CMB 990 - Precandidate dissertation research (variable cr) BCHM 640 – Post-transcriptional gene regulation (2 cr) Physiol/ HumGen 555 – Integrative Genomics (3 cr) or Biophys 440 - Biophysics of Diseases (3 cr)

Shaded areas denote PIBS and CMB courses
CMB 630 – Short Course is formally titled “Advanced Topics in Molecular Biology”

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APPENDIX 3: Sample Academic Plans Based on Interest (continued)

EXAMPLE 4. FOR A CMB STUDENT INTERESTED IN **TRANSLATIONAL RESEARCH**

First year (PIBS)		Second year (CMB)
FALL TERM PIBS 503 – Research skills / Research responsibility and Ethics (1 cr) PIBS 600 – Research Rotation (variable cr) CMB 850 – CMB student seminar (optional, 1 cr) CMB 630 – CMB Short Course (optional, 1 cr) CDB 530 – Cell Biology (3 cr) HumGen 541 – Molecular Genetics (3 cr)		FALL TERM CMB 850 – Student seminar (1 cr) CMB 630 – CMB Short Course (1 cr) CMB 990 - Precandidate dissertation research (variable cr) Pharm 502 – Grant Writing BCHM 550 – Macromolecular Structure & Function (3 cr) Physiol 510 – Systems & Integrative Physiology (4 cr) or MI/Path 553 – Cancer Biology (3 cr)
WINTER TERM PIBS 600 – Research Rotation (variable cr) CMB 850 – CMB student seminar (optional, 1 cr) CMB 630 – CMB Short Course (optional, 1 cr) PIBS 504 – Rigor & Reproducibility PIBS 507 – Introduction to Translational Research (3 cr) Physiol 520 – Computational Systems Biology in Physiology (3 cr) MI 619 – Pathogenic Evaluation of Animal Models of Human Disease (1 cr)		WINTER TERM CMB 850 – Student seminar (1 cr) CMB 630 – CMB Short Course (1 cr) CMB 990 - Precandidate dissertation research (variable cr) Physiol/HumGen 555 – Integrative Genomics (3 cr) or HumGen 542 – Molecular Genetic basis of human disease (3 cr)

Shaded areas denote PIBS and CMB courses
CMB 630 – Short Course is formally titled “Advanced Topics in Molecular Biology”