RNAiDB and PhenoBlast:

web tools for genome-wide phenotypic mapping projects

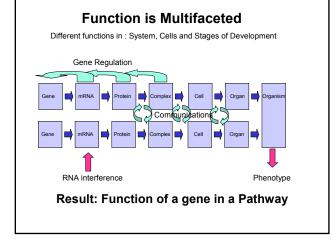
(but for now focused on Caenorhabditis elegans)

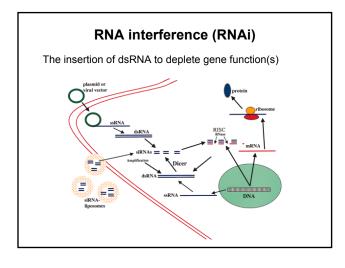
Kristin C. Gunsalus^{*}, Wan-Chen Yueh, Philip MacMenamin and Fabio Piano

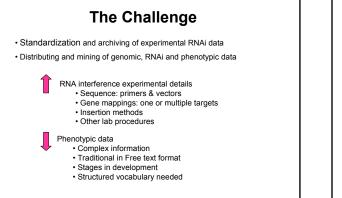
Center for Comparative Functional Genomics, Department of Biology, New York University, 1009 Silver Building, 100 Washington Square E., New York, NY 10003, USA

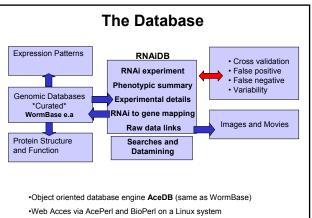
Nucleic Acids Research, 2004, Vol. 32, Database issue D406-D410 © 2004

<section-header><section-header><section-header><complex-block><complex-block>







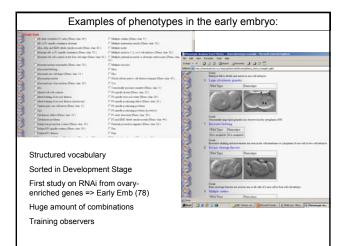


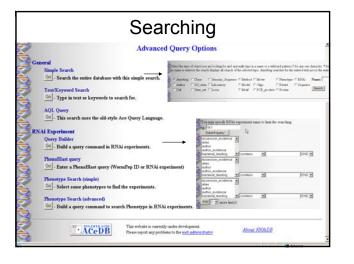
RNAi Experiment								
RNAI EJ	periment: PF:GL1	_1A7						
Experiment Summary Tree Local Genes Patentially Const Patentially Const Patentially Const Const	C03C Locus Description Chromosome	nz-2 Ribonaclease-diphosph M2 [WormBase]	RF Page					
	otypes for PV:GL1_LA	i i						
		n Maria Challen		_				
Embrya Emb	The late is the second second				1			
Emhryo					1			
Embryo Emb	The late is the second second	Energy See	Al Andrew Constraints of the Second S	111	n lada			
Endry Endr Endry Endrymic Plenotypes Advantationalise reasonable Creations dets Endrymetric dets Endrymetric strends anotherer Endrymetric strends ano	Brill Life Sec.	A manufacture of a grad of	Pritypolar Bit Holos Sectorem Bit Millionar Millionar Science		n lada Na daal			

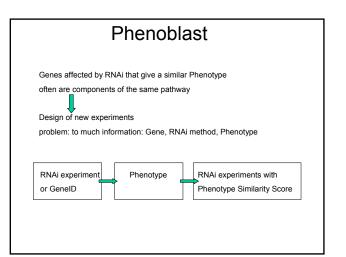
Experiment			Senes Potentially Inhibited
Genar Potentially Inhibited Template Type Template ID Date Datery Method Remark	CS2D10.7 (Generati) CS2D10.9 (BLAST) Y105C5B.13 (BLAST) Y47D7A.1 (BLAST) PCR_product <u>mi_CS2D10.7</u> 2002-11-19	Chromosome CS2D Locus Description Chromosome Y105C Locus Description Chromosome Y47D Locus	dr.7 vytin A-survented protein (WeemBare) V V V V V V V V V V V V V V V V V V SR13 O to Gene-OEP Page dr.10 O to Gene-OEP Page dr.10 O to Gene-OEP Page dr.10 C to gene-OEP Page dr.1 C to gene-OEP dr.1 C to gene

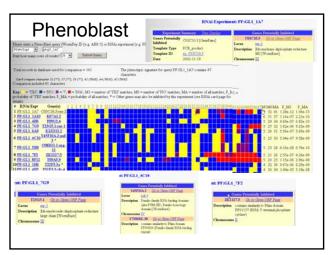
	URD	Product Tree Etaplay	RNAi Experiments	
WernPep ID CE17221 \$1 [A C02010.9] Description cycla A surrouted protein [WornBare] \$1 [A C02010.9] Chromosome IV \$1 [A C02010.9] Additional Links \$1 [F CGL1 LAS MWRDB C52010.7 NCEI WornGreener (C52010.7 \$120000 Oracylard C52010.7 \$120000 Strate C 52010.7 \$120000	WormBase ID		There are 5 RNAi assays for this sequence	
Description cycle A-associated protein [WomBare] b: <u>Ar VATO7A 138 a</u> Chromosome 12 42 <u>FGEL 1A3</u> Additional Liber 55 <u>FGEL 1A3</u> Additional Liber 55 <u>FGEL 1A3</u> WerDB C320107 NCBI WernGrease C320107 57 <u>FGEL 1A3</u> Graph of CSDD 107 57 <u>FGEL 1A3</u> Graph of CSDD 107 57 <u>FGEL 1A3</u> Jubbion 57 <u>FGEL 1A3</u> Jubional 57 <u>FGEL 1A3</u> MerDB C320107 Graph of CSDD 107 57 <u>FGEL 1A3</u> Graph of CSDD 107 57 <u>FGEL 1A3</u> Jubion 57 <u>FGEL 1A3</u> Jubion 57 <u>FGEL 1A3</u> Graph of CSDD 107 57 <u>FGEL 1A3</u> Jubion 57 <u>FGEL 1A3</u> Ju	Locus	skr-9	1: JA C52D10 7	
Chromesone V 4: E7: GL: 1.63 Additional Links 5: EF: GE: 1.65 WerDB CS2D10.7 5: EF: GE: 1.65 NCBE WundGener (SS2D10.7) 5: EF: GE: 1.65 Graph of CS2D10.7 5: EF: GE: 1.65 Scraph of CS2D10.7 5: EF: GE: 1.65	WormPep ID	CE17591	2: JA C52D10.9	
Additional Links 5: <u>PEGL1_1A5</u> WerfDB CS2D30.7 NCBUWindGener (S2D20).7 Graph of CS2D30.7 Statement of the second	Description	cyclin A-associated protein [WormBase]	3: JA Y47D7A 138 a	
WerDB C3200.7 NCBI WernGreen C52010.7 Graph of C52010.7 Graph of C52010.7 Station Station 274500 Station graph of C52010.7 Station station.7 Station	Chromosome	N	4: <u>PF.GL1_1A3</u>	
NCEI WermGeser 2020/07 Graph of CS3D10.7 1755600 1755700 1755900 1756900 1756900 1756900 1756900 175690 407-0 1755900 175690 1756900 1756900 1756900 1756900 175690 41,1,53295.7 13,153295.7	Additional Links		5: PF-GL1 1A5	
Graph of CS2D 0.7 Dickee 12:0300 12:0300 12:0300 12:04000 12:04000 12:04000 12:04000 12:04000 12:04000 12:04000 12:04000 12:04000 12:0400000 12:0400000000000000000000000000000000000	A Design of the second s			
174600 1716700 1716000 1716000 1716000 171600 17160 87-9 5000-7 511155500-7	NCBI WormGene	s C52D10.7		
8r-4 (200.7 1) (S200.7 #xd200.7		Graph of C52D1	0.7	
	14-152010-7 PF-94-146	View Alignment) N 138.40View Alignment)		
PF-021_040	14-(52010-7 FF-98-1_146 <u>\$11,(52010-9</u> <u>\$11,9470</u>	view alignment) m_138.40View alignment)		
9 - 521_240 3+15202-3	14-15200-7 97-98-1,145 413,15200-94 913,15200 91-98-1,145 94-15200-9	N_138.a(View Alignment)		
Pf sk1_243	44(5000.7 PF:01.140 1)1.(5000.9 PF:01.140 PF:01.140 JA:(5000.9 JA:(5000.9 JA:(5000.9	N,138.a(View Alignment) 1,138.a		

Constant Section 1 Constant Section 2 Constant		Flat File File File File File File File File
 Hot spectral two mesource (true of e)) Chapte and Chapter and Ch	The second secon	C See C See C See C See C Party C
 For each of a plant conset plane of plant of plant conset plane of plant conset plane of plant conset plant c	The second secon	F Da F Da F Da F Con F Faite C Parter F Datastichards functions (Base dar 1 F Datastichards functions (Base dar 1 F Datastichards functions (Base dar 1)
$\label{eq:constraints} \left[\begin{array}{c} \mbox{start} start$	16 16 16 1	17 bit 17 Om 17 Om 17 Destry 17 Destry 17 Destry Ongold Hone Destro de 2 17 Destry
Provide a second second (Parce de 1) Provide Provide (Parce de 1) Provide Provide and Parce de 1) Provide Provide and Parce de 1) Provide Provide and Parce de 1)	A de la constance de la consta	17 bit 17 Om 17 Om 17 Destry 17 Destry 17 Destry Ongold Hone Destro de 2 17 Destry
manufactory Classic Amount on the start Classic Amount on the start of	- La - La - La - Ca -	Chi Côm Chiete Chiete Chi Chi Chi
Emerginaria China Emerginaria China Emerginaria China Emerginaria China Participation China Parinon China	Add - Ad - Data - Ca - Ca	Con Chuire Chuire Chuire Chu Chu Chu Chu
Excerning description P (block description of descriptio		E Barley E Deverys E DA E Barles Downlay of specific room (New Jack E Barl
Consider on decision of (2) Construction on the construction of (2) Construction on the construction of (2) Construction of C		E Barley E Deverys E DA E Barles Downlay of specific room (New Jack E Barl
First Constanting process search PBLs due 31 Filterströd-oblission Filterströd-oblission		C Destroya 17 24 17 State Chapter of Supervisiones (Destro dur 2 17 Ray
Basel and on the set of the set	City Player-been new asymptotical City City City City City	F2M F3adaat booky digest from (boo dar 3 F3a
The best based down F2 Fragmin Security Proceeding (1) P detecting of most downs (modern) F2 Fragmin Security Proce dow (2) P detecting of most downs (modern) F2 Fragmin Security Proce dow (2) P detecting of most downs (modern) F2 Fragmin Security Proceeding (2) P detecting of most downs (modern) F2 Fragmin Security Proceeding (2) P detecting of most downs (modern) F2 Fragmin Security Proceeding (2) P detecting of most downs (modern) F2 Fragmin Security Proceeding (2)	No. Con.	P Tobard Soudy of specificous Plan day 1 P Tay
Parent samp of second datases (seckerage) P24 quark protocong select (States data 24) Categories are of parent (States data 31) P24 quark protocong protoco gravitates Qays P4 quark protocong protoco gravitates P24 parent data 31 P24 parent protocong protocong protocong P24 parent protocong protocong protocong P24 parent protocong protocong P24 parent protocong protocong P24 parent protocong protocong P24 parent protocong P24	211	Che
Contempts as of anti-Data (Ar 1) Care	2 Cm	
Cale C Property protocopy protocol (protocol) C Property protocol (Proc. Ser. 21) C Protocol (Proc. Ser. 21)		
C Ondares Mer (New the 21) C 21 are downed (New the 21)		
		E3m
Constance problems (F.72 aut 2107 deck mode words Plane due #7)		C Be
	T 344	Cite:
(* Diand a provine const (Pare the 14.) C Parend provine supers (Pare the 12.)	CMar	Elle .
P Digni Pi quide como (Neucline 29) P Pau P Digni Pi Annes P Pau	The developing builtons and 47 hours also in Plante that 11	Elf Augustion 77 Databased increme last
and the second s	Cartonal Cartonal	A
Structured vocabulary Sorted in Development Stage	RNAI Phenotype Search	WormBase
	Material President	Embryante Phenolyse
First study on RNAi from ovary-	Party or completing starter if on if its datages	Entrypeing lefting (* par. * an # destingen
	If linear server if strategies	a det f doeren enst i fearstate met
enriched genes => Early Emb (78)		Foliambryonis Phenolypes
	Tillingung Chipagiangland Print	
I have a second of a such to all such	P Simplers P Surplemann d'11 2 5 m	watchs Cold Million P Databa P (Datamapage
Huge amount of combinations	Pringhamment and	ington P.P.Landor P.Sulvande P.M.A.Landor
-	Banada	
The land of the second	Farmer Concernance Conc	mana Perferance Printers
Trained observers	" Carbony Cheringhouse Park	and ten Proprietary Property
	Earthra	Sending and Find () (m









Future

Expanding the database

- Online lab notebook
 - direct input of new data
 - · reproducible experiments
 - computer assisted phenotype scoring
 - quick comparisons and validation
- · More phenotypic definitions
- post embryonic stages
 - · more descriptors: Images (stained) and Movies
- New mining tools

Conclusions

Theirs and Mine

- Relative easy to search and good functional links internal and to other databases => no direct link with expression data
- Starting point for defining key proteins in complex pathways, development and pathology => drugs targeting
- Insight in proteins that maybe involved in the same pathway
 => links to biochemical and proteomics data needed
- Model database for functional genomic projects in other organism => much more complex
- No links to pathways, systems and other proteins
 => virtual cell or virtual nematode

