**John Hu**

**College of Tropical Agriculture and Human Resources**

(Department of Plant and Environmental Protection Sciences)

FTE Distribution: 15% I; 85% R; 0% E

**Education**

|  |  |  |
| --- | --- | --- |
| **Degree** | **University** | **Major** |
| Bachelors  | Nanjing Nanjing Agri Univ., China | Plant Protection |
| Masters | Cornell University, Ithaca, NY, USA | Plant Pathology |
| PhD | Cornell University, Ithaca, NY, USA | Plant Pathology |

**Lifetime and Fellow Achievement Awards (peer nominated and endorsed national and International-important for those without accreditation that is peer nominated and endorsed, recognized)**

**Honors**

Excellence in Research, 2005, CTAHR, UHM

**Professional Appointments**

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| --- | --- | --- |
| **Title** | **Employer** | **Dates Employed** |
| ProfessorAssociate ProfessorAssistant ProfessorResearch Associate | University of Hawaii, Honolulu, HIUniversity of Hawaii, Honolulu, HIUniversity of Hawaii, Honolulu, HICornell University, Geneva, NY | 2002-present1996-20021990-19961987-1990 |

**Courses Taught**

PEPS 730 Plant Virology (2 credits, 2019)

PEPS 630 Plant Virology (4 credits, 1991 to 2015 every other Fall)

PEPS 606 Biology of Plant Pathogens (Viruses) (2 credits, 2016, 2017, 2018, 2019)

PEPS 660 Research Seminar (1 credit, 2016)

**Publications (reverse chronological order)**

Book Chapters

Dey, K., Melzer M., and J. Hu 2018. Virus-Induced Gene Silencing *in* Plant Biotechnology, Volume 2: Transgenics, Stress Management, and Biosafety Issues.

Green, James, Wayne Borth, John S. Hu (2016) Engineering Resistance to Viruses. In: Mohandas S, Ravishankar KV (eds) Banana: genomics and transgenic approaches for genetic improvement. Springer, Singapore, pp 237-246

Martelli, G. P., Agranovsky, A. A., Bar-Joseph, M., Boscia, D., Candresse, T., Coutts, R. H. A., Dolja, V. V., Hu, J. S., Jelkmann, W., Karasev, A. V., Martin, R. R., Minafra, A., Namba, S., and Vetten, H. J. 2011. Family *Closteroviridae*, In: King A., Adams M.J., Carstens E.B., Lefkowitz E. (eds). Virus Taxonomy. Ninth Report of the International Committee on Taxonomy of Viruses, pp. 987-1001. Elsevier-Academic Press, Amsterdam, The Netherlands.

Refereed Journal Publications

Olmedo-Velarde Alejandro, Adam C. Park, Jari Sugano, Janice Y. Uchida, Michael Kawate, Wayne B. Borth, John S. Hu, and Michael J. Melzer 2019. Characterization of Ti ringspot-associated virus, a novel emaravirus associated with an emerging ringspot disease of Cordyline fruticosa (L.) Plant Disease <https://doi.org/10.1094/PDIS-09-18-1513-RE>

Hamim, I., Maher Al Rwahnih, Wayne B. Borth, Jon Y. Suzuki, Michael J. Melzer, Marisa M. Wall, James C. Green, and John S. Hu 2019 Papaya ringspot virus isolates from papaya in Bangladesh: detection, characterization and distribution. Plant Disease in press

Wang, D., Boluk, G., Quinto, E.A., Hamim, J. C. Green, W. B. Borth, M. J. Melzer, Suzuki, J., M. M. Wall, M.M., Matsumoto, T., G. F. Sun, and J. S. Hu, 2019. First Report of Zucchini tigre mosaic virus infecting Bitter Melon (Momordica charantia) in Hawaii. Plant Disease

<https://doi.org/10.1094/PDIS-08-18-1391-PDN>

Hamim, I. Wayne B. Borth · Michael J. Melzer · Jon Y. Suzuki · Marisa M. Wall, John S. Hu 2019. Occurrence of tomato leaf curl Bangladesh virus and associated subviral DNA molecules in papaya in Bangladesh: molecular detection and characterization. Archives of Virology 164:1661-1665

Feng, X., Orellana, G., Green, J., Melzer, M.J., Hu, J.S., and Karasev, A.V. 2019. A new strain of Bean common mosaic virus from lima bean (Phaseolus lunatus): biological and molecular characterization. Plant Disease <https://doi.org/10.1094/PDIS-08-18-1307-RE>

Kishore Dey\*, James C Green\*, Michael Melzer, Wayne Borth, John Hu, 2018. Mealybug Wilt of Pineapple and Associated Viruses. Horticulturae. 4(4);52.

Wang, D., Ocenar, J., I. Hamim, J. C. Green, W. B. Borth, M. J. Melzer, Suzuki, J., M. M. Wall, M.M., Matsumoto, T., G. F. Sun, and J. S. Hu, 2018. First Report of Bean yellow mosaic virus Infecting Nasturtium (Tropaeolum majus) in Hawaii. Plant Disease <https://doi.org/10.1094/PDIS-06-18-1082-PDN>.

Wang, D., I. Hamim, J. C. Green, W. B. Borth, M. J. Melzer, Suzuki, J., M. M. Wall, M.M., Matsumoto, T., G. F. Sun, and J. S. Hu, 2018. First Report of Apple of Peru (Nicandra physalodes) Infected with Pepper mottle virus in Hawaii. Plant Disease <https://doi.org/10.1094/PDIS-06-18-1061-PDN>.

Zhang, J., John Hu, Huifang Shen, Yucheng Zhang, Dayuan Sun, Xiaoming Pu, Qiyun Yang, Qiurong Fan and Birun Lin. 2018.Genomic analysis of the Phalaenopsis pathogen Dickeya sp. PA1, representing the emerging species Dickeya fangzhongdai. BMC Genomics (2018) 19:782 https://doi.org/10.1186/s12864-018-5154-3

Zhang, J., Borth, W.B., Sether, D., Lin, B, Melzer, M.J., Shen, H., Pu, X, Sun, D., Nelson, S., Hu, J.S. 2018.Multiplex Detection of Three Banana Viruses by Reverse Transcription Loop-mediated Isothermal Amplification (RT-LAMP). Tropical Plant Pathology 43:543–551.

Dey, Kishore, Milena Leite, John Hu, Jordan, Ramon, and Mike Melzer 2018. Detection of Jasmine virus H and characterization of a second pelarspovirus infecting star jasmine (Jasminum multiflorum) and angelwing jasmine (J. nitidum) plants displaying virus-like symptoms. Archives of Virology https://doi.org/10.1007/s00705-018-3947-y

Hamim, Islam, Wayne B. Borth, Josiah Marquez, James C. Green, Michael J. Melzer, John S. Hu 2018 Transgene-mediated resistance to Papaya ringspot virus: challenges and solutions Phytoparasitica https://doi.org/10.1007/s12600-017-0636-4

Hamim, I., Wayne Borth, Michael J. Melzer, and John Hu 2018. Ultra-sensitive detection of Papaya ringspot virus using single-tube nested PCR. Acta virologica 62: 379 – 385.

Wang, D., I. Hamim, J. C. Green, W. B. Borth, M. J. Melzer, and J. S. Hu, 2018. First Report of Dasheen mosaic virus infecting Taro (Colocasia esculenta) in Bangladesh. Plant Disease <https://doi.org/10.1094/PDIS-03-18-0442-PDN>.

Green, J. and Hu. J.S. 2017. Editing Plants for Virus Resistance Using CRISPR-Cas. Acta virologica 61: 138 – 142.

Green, J.C., Borth, W.B., Melzer, M.J., Wang, Y.N., Hamim, I.,and Hu, J.S. 2017. First Report of Bean common mosaic virus infecting Phaseolus lunatus in Hawaii. Plant Disease 101:1557.

Hamim,I., J. C. Green, W. B. Borth, M. J. Melzer, Y. N. Wang, and J. S. Hu. 2017. First Report of Banana bunchy top virus in Heliconia spp. on Hawaii. 2017, Volume 101: 2153

Li, Y., Wang, Y., Hu, J., Xiao, L., Tan, G., Lan, P., Liu, Y.,and Li, F. 2017. Molecular and biological characteristics of Tomato mottle mosaic virus Chinese isolate. Virology Journal 14:15-23.

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Wang, Y. N., Borth, W. B., Hamim, I., Green, J.I., Melzer, M.J., and Hu, J.S. 2017. First Report of Taro bacilliform CH Virus (TaBCHV) on Taro (Colocasia esculenta) in Hawaii. Plant Disease 101:1334.

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Liu, T, Hou, J., Borth, W., Hu, J.. Zuo, Y. 2016. Genome‑wide identification, classification and expression analysis in fungal–plant interactions of cutinase gene family and functional analysis of a putative ClCUT7 in Curvularia lunata. Mol Genet Genomics 291:1105–1115.

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Xu, Y., Wang, S., Li, Y., Tao, H., Huang, Y., Wu, B., Dong, Y., Hu, J., Liu, Y. 2016. Complete genome sequence of a distinct Calla lily chlorotic spot virus isolated from Mainland China. Arch. Virol. 161:219-222.

Watanabe, S., Ruschel, R., Marrero, G., Sether, D., Borth, W., Hu, J., and Melzer, M. 2016. A distinct lineage of Watermelon mosaic virus naturally infects honohono orchid (Dendrobium anosmum) and passionfruit (Passiflora edulis) in Hawaii. New Disease Reports 34:13.

Liu, T, Hu, J. Zuo, Y., Jin, Y., Hou, J 2015. Identification of microRNA‑like RNAs from Curvularia lunata associated with maize leaf spot by bioinformation analysis and deep sequencing. Mol Genet Genomics DOI 10.1007/s00438-015-1128-1

Dey, K. Borth, W.B., Melzer M.J., Wang, M.L., Hu, J.S. 2015 Analysis of Pineapple mealybug wilt associated virus -1 and -2 for potential RNA silencing suppressors and pathogenicity factors. Viruses Viruses 7:969-995.

Dey, K. Borth, W.B., Melzer M.J., Hu, J.S. 2015 Application of Circular Polymerase Extension Cloning to Generate Infectious Clones of a Plant Virus. Journal of Applied Biotechnology 3:34-44.

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Melzer, MJ, Nelson Simbajon, N., Carillo, J., Borth, WB, Freitas-Astúa, J., Kitajima, EW, Neupane, K.R., Hu, JS. 2013. A cilevirus infects ornamental hibiscus in Hawaii. Arch. Virol. Doi:10.1007/s00705013-1745-0

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Extension Publications

Creative Works (i.e., Extension Videos, Websites, Blogs, Creative Designs and Exhibitions, etc.)

Leadership Roles (Committees, Boards, Advisory, etc.)

Member of the Graduate Council, University of Hawaii (1998-2004)

Member of the Research Council, University of Hawaii (2007 – 2012)

Graduate Chair, Tropical Plant Pathology, University of Hawaii (1998-2004)

Chairman, Virology Committee of the American Phytopathological Society (1994-1995)

Chairman, Western Regional Coordinating Committee (WCC-20)

"Viruses and virus-like diseases of fruit crops". (1994-1995; 2001-2003; 2014-2015)

 Member of the NSF-China Grant Review panel (2013 and 2014)

**Graduate Students**

|  |  |  |
| --- | --- | --- |
| Category | Current Number of Students | Number Graduated (Career) |
| *Chair* of Master’s Committees | 1 | 7 |
| *Chair* of PhD Committees | 1 | 6 |
| Member of Master’s Committees | 3 | 21 |
| Member of PhD Committees | 2 | 27 |

**Grant Support**

Title of Grant: Genetic Technologies for Detection, Characterization, and Control of Plant Viruses in Hawaii

Source of Grant: USDA ARS

Total Dollar Value (Your share of the grant value): $61,169

Dates of Grant: 2019-2021

Role: PI

Title of Grant: ORNAMENTAL GINGER: STATEWIDE QUARANTINE VIRUS SURVEY AND CASUAL AGENT IDENTIFICATION FOR CROP DECLINE

Source of Grant: Hawaii DOA

Total Dollar Value (Your share of the grant value): $121,470 ($80,000)

Dates of Grant: 2019-2021

Role: CoPI

Title of Grant: Detection, characterization, and management of plant viruses

Source of Grant: USDA USID

Total Dollar Value (Your share of the grant value): $183,400

Dates of Grant: 2015-2020

Role: PI

Title of Grant: Editing plants genomes with CRISPR-Cas for resistance to viruses

Source of Grant: USDA NIFA (Hatch)

Total Dollar Value (Your share of the grant value): $80, 000

Dates of Grant: 2017-2019

Role: PI

Title of Grant: Characterization and management of invasive plant viruses in Hawaii

Source of Grant: USDA ARS

Total Dollar Value (Your share of the grant value): $210, 000

Dates of Grant: 2014-2019

Role: PI

Title of Grant: Emerging plant virus diseases which threaten Hawaii’s food security and economy

Source of Grant: USDA NIFA (Hatch)

Total Dollar Value (Your share of the grant value): $90,000.

Dates of Grant:2013-2015

Role: PI

Title of Grant: Detection and management of invasive plant viruses in Hawaii

Source of Grant: USDA-ARS

Total Dollar Value (Your share of the grant value): $47,000

Dates of Grant:2014-2016

Role: PI

Title of Grant: Development and screening of transgenic banana plants resistant to Banana bunchy top

virus

Source of Grant: USDA-ARS

Total Dollar Value (Your share of the grant value): $100,000

Dates of Grant: 2008-2014

Role: PI

Title of Grant: Management of Citrus Blight in Hawaii

Source of Grant: USDA-ARS

Total Dollar Value (Your share of the grant value): $80,000

Dates of Grant: 2008-2014

Role: PI

Title of Grant: Development of Mexican lime plants for resistance to Citrus tristeza virus

Source of Grant: USDA-ARS

Total Dollar Value (Your share of the grant value): $60,000

Dates of Grant: 2008-2014

Role: PI

Title of Grant: Development of disease-resistant transgenic plants

Source of Grant: USDA-ARS

Total Dollar Value (Your share of the grant value): $100,000

Dates of Grant: 2010-2013

Role: PI

Title of Grant: Multiple resistance to viral and fungal diseases of banana using gene silencing

Source of Grant: USDA-CSREES T-STAR

Total Dollar Value (Your share of the grant value): $175,728

Dates of Grant: 2009-2012

Role: PI

Title of Grant: Identification and characterization of a new viral disease in Hawaii’s anthurium and

production of virus-free plants

Source of Grant: USDA-ARS

Total Dollar Value (Your share of the grant value): $20,000

Dates of Grant: 2009-2010.

Role: PI

Title of Grant: High through-put PCR for virus detection

Source of Grant: USDA-ARS

Total Dollar Value (Your share of the grant value): $145,000

Dates of Grant: 2004-2009

Role: PI

Title of Grant: Environmentally-friendly strategies for management of mealybugs, ants, ampeloviruses, and mealybug wilt of pineapple

Source of Grant: USDA-CSREES (RIPMCGP)

Total Dollar Value (Your share of the grant value): $40,000

Dates of Grant: 2006-2008.

Role: PI

Title of Grant: Pineapple virus control

Source of Grant: USDA-ARS Special Grant on Pineapple

Total Dollar Value (Your share of the grant value): $121,000

Dates of Grant: 2005–2010

Role: PI

Title of Grant: Detection, distribution, and etiological role of invasive badnavirusesin pineapple

Source of Grant: USDA-CSREES, T-STAR

Total Dollar Value (Your share of the grant value): $210,000

Dates of Grant: 2005-2010

Role: PI

Title of Grant: Effects of Viral Suppressors of RNA Silencing in Sugarcane

Source of Grant: USDA-CSREES, T-STAR

Total Dollar Value (Your share of the grant value): $240,000

Dates of Grant: 2005-2010

Role: PI

Title of Grant: Transgenic citrus plants with broad and durable resistance to CTV

Source of Grant: USDA-CSREES, Special Competitive Grant Program

Total Dollar Value (Your share of the grant value): $165,000

Dates of Grant: 2004-2007

Role: PI

Title of Grant: Field evaluation of genetically engineered banana plants for BBTV-resistance in Hawaii

Source of Grant: J. USDA-CSREES, T-STAR

Total Dollar Value (Your share of the grant value): $210,000

Dates of Grant: 2004-2007

Role: PI

Title of Grant: Development of transgenic pineapple plants with virus-resistance, nematode-resistance,

and flowering-control

Source of Grant: USDA-ARS Special Grant on Minor Crop

Total Dollar Value (Your share of the grant value): $53,000

Dates of Grant: 2004–2009

Role: PI

Title of Grant: Development of transgenic pineapple plants to control mealybug wilt of pineapple

Source of Grant: USDA-ARS Special Grant on Pineapple Genetic Engineering

Total Dollar Value (Your share of the grant value): $98,000

Dates of Grant: 2004–2009

Role: PI

Title of Grant: Transgenic plants with broad-spectrum resistance to viruses

Source of Grant: USDA-CSREES, T-STAR

Total Dollar Value (Your share of the grant value): $218,000

Dates of Grant: 2002-2007

Role: PI

Title of Grant: Detection, characterization, and management of phytoplasma diseases in Hawaii

Source of Grant: USDA-CSREES, T-STAR

Total Dollar Value (Your share of the grant value): $236,000

Dates of Grant: 2002-2006

Role: PI

Title of Grant: Development of transgenic pineapple plants with virus-resistance, nematode-resistance,

and flowering-control

Source of Grant: USDA-ARS Special Grant on Minor Crop

Total Dollar Value (Your share of the grant value): $170,000

Dates of Grant: 2002–2005

Role: PI

Title of Grant: Characterization of a new closterovirus associated with mealybug wilt of pineapple

Source of Grant: USDA-CSREES, T-STAR

Total Dollar Value (Your share of the grant value): $93,000

Dates of Grant: 2001–2006

Role: PI

Title of Grant: Development of strategies to manage citrus tristeza virus for a new citrus industry in

Hawaii

Source of Grant: USDA-CSREES, T-STAR

Total Dollar Value (Your share of the grant value): $258,000

Dates of Grant: 2000–2006

Role: PI

Title of Grant: Special Grant on Pineapple Genetic Engineering. “Development of transgenic pineapple

plants to control mealybug wilt of pineapple”

Source of Grant: USDA-ARS

Total Dollar Value (Your share of the grant value): $130,000

Dates of Grant: 2000–2005

Role: PI

Title of Grant: Development and implementation of environment-friendly strategies for management of

mealybug wilt of pineapple

Source of Grant: USDA-CSREES

Total Dollar Value (Your share of the grant value): $203,500

Dates of Grant: 2003-2005

Role: PI

Title of Grant: Transgenic citrus plants with broad and durable resistance to CTV

Source of Grant: USDA-CSREES

Total Dollar Value (Your share of the grant value): $165,000

Dates of Grant: 2004-2006

Role: PI

Title of Grant: Development and evaluation of strategies to manage closteroviruses, mealybugs, and

mealybug wilt of pineapple

Source of Grant: Hawaii DOA

Total Dollar Value (Your share of the grant value): $140,000

Dates of Grant: 2002-2005

Role: PI

Title of Grant: Use of biotechnology to produce transgenic bananas resistance to banana bunchy top virus

infection

Source of Grant: Hawaii DOA.

Total Dollar Value (Your share of the grant value): $30,000

Dates of Grant: 2004-2005

Role: PI

Title of Grant: Transgenic citrus plants with broad and durable resistance to CTV

Source of Grant: USDA-CSREES

Total Dollar Value (Your share of the grant value): $142,000

Dates of Grant: 2002-2004

Role: PI

Title of Grant: Detection, characterization, and management of a new closterovirus associated with

mealybug wilt of pineapple

Source of Grant: Hawaii DOA

Total Dollar Value (Your share of the grant value): $134,000

Dates of Grant: 2000–2002

Role: PI

Title of Grant: Development and evaluation of BBTV-resistant transgenic banana plants with banana

bunchy top virus genes using Hawaiian varieties

Source of Grant: USDA-ARS

Total Dollar Value (Your share of the grant value): $210,000

Dates of Grant: 1999–2002

Role: PI

Title of Grant: Use of biotechnology to produce transgenic bananas resistance to banana bunchy top virus

infection

Source of Grant: Hawaii DOA

Total Dollar Value (Your share of the grant value): $60,000

Dates of Grant: 1999–2000

Role: PI

Title of Grant: Engineering plants constitutively expressing broad-spectrum resistance

Source of Grant: USDA-CSREES

Total Dollar Value (Your share of the grant value): $173,000

Dates of Grant: 1998–2002

Role: PI

Title of Grant: Transmission, epidemiology, and management of viruses in mealybug wilt of pineapple

Source of Grant: Hawaii DOA

Total Dollar Value (Your share of the grant value): $149,000

Dates of Grant: 1997-1999

Role: PI

Title of Grant: Development of rapid, sensitive, and reliable assays for detection of viruses infecting

papaya, citrus, and banana

Source of Grant: USDA-ARS Special Grant for Minor Crops Program

Total Dollar Value (Your share of the grant value): $75,000

Dates of Grant: 1997–2001

Role: PI

Title of Grant: Use of biotechnology to produce transgenic bananas resistance to banana bunchy top virus

infection,

Source of Grant: World Bank Banana Improvement Program

Total Dollar Value (Your share of the grant value): $114,125

Dates of Grant: 1995–1998

Role: PI

Title of Grant: Development of rapid detection assays for virus and virus-like diseases of tropical fruit

crops

Source of Grant: USDA-ARS Special Agreement Grant

Total Dollar Value (Your share of the grant value): $74,000

Dates of Grant: 1995–2000

Role: PI

Title of Grant: “Role of mealybug stress in pineapple mealybug wilt and pineapple productivity,

Source of Grant: USDA-Western Regional IPM

Total Dollar Value (Your share of the grant value): $150,000

Dates of Grant: 1997–2000

Role: PI

Title of Grant: Use of biotechnology to produce transgenic bananas resistance to banana bunchy top virus infection

Source of Grant: World Bank Banana Improvement Program

Total Dollar Value (Your share of the grant value): $114,125

Dates of Grant: 1995–1997

Role: PI

Title of Grant: Development of rapid detection assays for virus and virus-like diseases of tropical fruit

crops

Source of Grant: USDA-ARS Special Agreement Grant

Total Dollar Value (Your share of the grant value): $25,000

Dates of Grant: 1995–2000

Role: PI

Title of Grant: Investigation into the biology and ecology of *Sophonia rufofascia* in forest and watershed

areas

Source of Grant: Land & Natural Resources/USDA

Total Dollar Value (Your share of the grant value): $43,000

Dates of Grant: 1995

Role: PI

Title of Grant: Replication of banana bunchy top virus in alternative plants and in aphid vectors

Source of Grant: USDA-National Research Initiative Competitive Grants Program

Total Dollar Value (Your share of the grant value): $49,807

Dates of Grant: 1994–1996

Role: PI

Title of Grant: Papaya fruit ripening disorder‑evaluation of impact and etiology

Source of Grant: USDA-ARS Special Grant for Minor Crops Program

Total Dollar Value (Your share of the grant value): $25,600

Dates of Grant: 1994

Role: PI

Title of Grant: Management of sweetpotato whitefly

Source of Grant: USDA-ARS Special Grant for Minor Crops Program

Total Dollar Value (Your share of the grant value): $30,000

Dates of Grant: 1994

Role: PI

Title of Grant: Effect of leafhoppers on guava production

Source of Grant: State of Hawaii Governor’s Agricultural Coordinating Committee

Total Dollar Value (Your share of the grant value): $20,000

Dates of Grant: ,1994

Role: PI

Title of Grant: Etiology of macadamia quick decline (MQD

Source of Grant: State of Hawaii Governor’s Agricultural Coordinating Committee

Total Dollar Value (Your share of the grant value): $50,000

Dates of Grant: 1994

Role: PI

Title of Grant: Use of biotechnology for detection and control of MLO diseases of fruit trees in Hawaii

Source of Grant: USDA-CSRS Section 406 program

Total Dollar Value (Your share of the grant value): $174,400

Dates of Grant: 1993–1996

Role: PI

Title of Grant: Detection and control of MLOs in guava and macadamia trees in Hawaii

Source of Grant: State of Hawaii Governor’s Agricultural Coordinating Committee

Total Dollar Value (Your share of the grant value): $30,000

Dates of Grant: 1993–1994

Role: PI

Title of Grant: Control of tomato spotted wilt virus using transgenic plants that produce virus-specific

monoclonal antibodies

Source of Grant: Ohio Floral Foundation

Total Dollar Value (Your share of the grant value): $10,000

Dates of Grant: 1993–1994

Role: PI

Title of Grant: The role of two spotted leafhopper in disorders of uluhe and ohia in Hawaiian forests

Source of Grant: State of Hawaii Governor’s Agricultural Coordinating Committee.

Total Dollar Value (Your share of the grant value): $54,121

Dates of Grant: 1993

Role: PI

Title of Grant: Molecular approaches to *Dendrobium* orchid virus control

Source of Grant: USDA-CSRS Section 406 Program

Total Dollar Value (Your share of the grant value): $162,200

Dates of Grant: 1992–1996

Role: PI

Title of Grant: Control of tomato spotted wilt virus using transgenic plants that produce virus-specific

monoclonal antibodies

Source of Grant: American Floral Endowment

Total Dollar Value (Your share of the grant value): $76,500

Dates of Grant: 1992–1996

Role: PI

Title of Grant: Development of diagnostic assays for detection of the yellow leaf syndrome causal agent

in sugarcane

Source of Grant: Hawaiian Sugar Planter’s Association

Total Dollar Value (Your share of the grant value): $50,750

Dates of Grant: 1992

Role: PI

Title of Grant: Control of banana bunchy top virus with genetic engineered transgenic banana plants

Source of Grant: State of Hawaii Governor’s Agricultural Coordinating Committee

Total Dollar Value (Your share of the grant value): $150,000

Dates of Grant: 1992–1994

Role: PI

Title of Grant: Mealybug wilt of pineapple: etiology, epidemiology, and control Mealybug wilt of

pineapple: etiology, epidemiology, and control

Source of Grant: State of Hawaii Governor’s Agricultural Coordinating Committee

Total Dollar Value (Your share of the grant value): $200,000

Dates of Grant: 1991–1995

Role: PI

Title of Grant: Control of tomato spotted wilt virus using transgenic plants that produce virus-specific

antibodies

Source of Grant: Gloeckner Foundation, Inc

Total Dollar Value (Your share of the grant value): $5,000

Dates of Grant: 1991

Role: PI

Title of Grant: Etiology and rapid detection of yellow leaf syndrome of sugarcanes

Source of Grant: Hawaiian Sugar Planter’s Association

Total Dollar Value (Your share of the grant value): $5,000

Dates of Grant:1991

Role: PI