

# C. BENJAMIN NAMAN, PH.D. – CURRICULUM VITAE BRIEF

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## SUMMARY OF QUALIFICATIONS

Natural Product Chemist with Specialization in Anticancer and Antiparasitic Drug Discovery. 4 years industrial experience with basic, customer-facing, and translational research to generate new commercialized products.

- Internationally experienced (multiple short-term in India and long-term in China working arrangements). Currently working to establish a new, world-class, biopharmaceutical research center in Ningbo, China.
- Accomplished in project management, collaborative relationship building, personnel development, lead prioritization, and interaction with regulatory agencies. Responsible for several marketed flavor products.
- Effective communicator with >25 publications & unique patents, >40 invited lectures and >40 posters representing drug discovery, natural medicine, dietary supplements, ethics and biodiversity protection.

## PROFESSIONAL AND EDUCATIONAL EXPERIENCE

### **CyanoRx, Inc. (Delaware C-Corporation)**

President and Chief Executive Officer

San Diego, CA

Oct 2018 – Present Day

Joint Venture Leader (宁波蓝碧药业)

Dec 2018 – Present Day

### **Ningbo University (College of Food and Pharmaceutical Sciences)**

Associate Professor and Deputy Director, Department of Marine Pharmacy

Ningbo, Zhejiang, China

Dec 2017 – Present Day

- Leading independent research program investigating marine cyanobacteria for anticancer drug discovery.
- Initiated collaborative research programs with colleagues in China, India, USA, and the Philippines.
- Mentoring students: 1 Ph.D., 2 M.S., and 1 B.S. Teaching classes on Pharmaceutical Sciences in English.

### **University of California, San Diego (Scripps Institution of Oceanography)**

Visiting Research Scientist, Center for Marine Biotechnology and Biomedicine

La Jolla, CA

Feb 2018 – Present Day

Postdoctoral Scholar/SRA3, Center for Marine Biotechnology and Biomedicine

May 2015 – Dec 2017

Advisor: Distinguished Professor William H. Gerwick, Ph.D.

- Identified and developed new anticancer agents for drug discovery from marine cyanobacteria.
- Mentored 8 Ph.D. students and 2 visiting professors; 1 month intellectual exchange program in India.

### **The Ohio State University (College of Pharmacy)**

Ph.D., Pharmaceutical Sciences (Medicinal Chemistry and Pharmacognosy)

Columbus, OH

Aug 2010 – May 2015

Dissertation: “Phytochemical Investigation of the Medicinal Plant *Taxodium distichum* and Library Screening of *Thalictrum* Alkaloids for New Antileishmanial Drug Leads”

Advisor: Jack L. Beal Endowed Chair Professor A. Douglas Kinghorn, Ph.D., D.Sc.

- Coordinated regulatory approval of animal testing for several pure compounds and crude extracts.
- Mentored 2 younger Ph.D. students and supervised 2 undergraduate student researchers.

### **Givaudan Flavors Corporation (Division of Science and Technology)**

Research Technologist (BS level) and Research Associate (MS level)

Cincinnati, OH

Jul 2006 – Jun 2010

- Jointly responsible for inventing and commercializing a patented and GRAS-approved natural flavor.
- Commercialized new ingredients as Technical Project Manager of 2009-2010 Citrus Research Program.
- Interfaced with synthetic chemists, regulatory affairs, and applications scientists to advance projects.

### **Carnegie Mellon University (Mellon College of Science)**

B.S., Chemistry and Psychology

Pittsburgh, PA

May 2006

Research Assistant, Mellon Institute of Industrial Research

May 2005 – May 2006

Advisor: Professor Roberto R. Gil, Ph.D.

Teaching Assistant, School of Computer Science

Aug 2003 – May 2006

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### SELECTED RESEARCH GRANTS AND FUNDING

PI	National Natural Science Foundation of China (NSFC) 81850410553 “Anticancer Drug Lead Discovery from Chinese Sea Cyanobacteria”	400K CNY (~60K USD) 2019/01/01 – 2020/12/31
Co-PI	Ministry of Science and Technology of China (MOST) 2018YFC0310901 “Biodiversity Mining of Deep Sea ... Resources ... for Medicinal Use”	1M CNY (~150K USD) 2018/08/01 – 2021/12/31

### SELECTED AWARDS

Science Diplomacy Leadership Fellow (2018), American Association for the Advancement of Science  
Post-Doctoral NIH NRSA Fellowship (2015-2017), NIH/NCI T32 CA009523  
Indo-USA Knowledge Exchange Program Travel (2016 & 2018), United States-India Educational Foundation  
Preparing Future Faculty Fellowship (2014-2015), The Ohio State University  
Pre-Doctoral Jack. L. Beal Award Fellowship (2014-2015), College of Pharmacy, The Ohio State University  
SciFinder Future Leaders in Chemistry Award (2014), American Chemical Society/Chemical Abstracts Service  
Pre-Doctoral NIH NRSA Fellowship (2012-2014), NIH/NIGMS T32 GM008512  
Pre-Doctoral AFPE Fellowship (2012-2014), American Foundation for Pharmaceutical Education  
Induction and Lifetime Membership Award (2012), Rho Chi National Academic Honor Society in Pharmacy  
Jack L. Beal Graduate Student Award in Medicinal Chemistry and Pharmacognosy (2011), OSU C.O.P.  
Undergraduate Student Award in Spectroscopy (2006), Society for Applied Spectroscopy, Pittsburgh Section

### SELECTED PUBLICATIONS AND PATENTS (FROM 28 TOTAL)

Almaliti, J.; Miller, B.; Pietraszkiewicz, H.; Glukhov, E.; **Naman, C.B.**; Kline, T.; Hanson, J.; Li, X.; Zhou, S.; Valeriote, F.A.; Gerwick, W.H.\* Exploration of the carmaphycins as payloads in antibody drug conjugate anticancer agents. *Eur. J. Med. Chem.* **2019**, *161*, 416-432.

Wang, J.; Zheng, J.; Huang, C.; Zhao, J.; Lin, J.; Zhou, X.; **Naman, C.B.**; Wang, N.; Gerwick, W.H.; Wang, Q.; Yan X.; Cui, W.\*; He, S.\* Eckmaxol, a phlorotannin extracted from *Ecklonia maxima*, produces anti- $\beta$ -amyloid oligomer neuroprotective effects possibly via directly acting on glycogen synthase kinase 3 $\beta$ . *ACS Chem. Neurosci.* **2018**, *9*, 1349-1356. DOI: 10.1021/acchemneuro.7b00527. PMID: 29608860.

**Naman, C.B.**; Rattan, R.; Nikoulina, S.E.; Lee, J.; Miller, B.W.; Moss, N.A.; Armstrong, L.; Boudreau, P.D.; Debonsi, H.M.; Valeriote, F.A.; Dorrestein, P.C.; Gerwick, W.H. Integrating molecular networking and biological assays to target the isolation of a cytotoxic cyclic octapeptide, samoamide A, from an American Samoan marine cyanobacterium. *J. Nat. Prod.* **2017**, *80*, 625-633 (Special issue in honor of Dr. Phil Crews).

**Naman, C.B.**; Leber, C.A.; Gerwick, W.H. Modern natural products drug discovery and its relevance to biodiversity conservation. In *Microbial Resources - From Functional Existence in Nature to Applications*. Kurtböke, I., Ed.; Elsevier: Amsterdam, 2017, pp. 103-120. (Invited book chapter). ISBN: 9780128051405.

Li, J.; Yuan, C.; Pan, L.; Benatrehina, P.A.; Chai, H.; Keller, W.J.; **Naman, C.B.\***; Kinghorn, A.D.\* Bioassay-guided isolation of antioxidant and cytoprotective constituents from a maqui berry (*Aristotelia chilensis*) dietary supplement ingredient as markers for qualitative and quantitative analysis. *J. Agric. Food Chem.* **2017**, *65*, 8634-8642.

**Naman, C.B.**; Gromovsky, A.D.; Vela, C.M.; Fletcher, J.N.; Gupta, G.; Varikuti, S.; Zhu, X.; Zywot, E.M.; Chai, H.; Werbovetz, K.A.; Satoskar, A.R.; Kinghorn, A.D. Antileishmanial and cytotoxic activity of some highly oxidized abietane diterpenoids from the bald cypress, *Taxodium distichum*. *J. Nat. Prod.* **2016**, *79*, 598-606. (Special issue in honor of Professors John Blunt and Murray Munro).

## **C. BENJAMIN NAMAN, PH.D. – CURRICULUM VITAE BRIEF**

**Naman, C.B.;** Li, J.; Moser, A.; Hendrycks, J.M.; Benatrehina, P.A.; Chai, H.; Yuan, C.; Keller, W.J.; Kinghorn, A.D. Computer-assisted structure elucidation of black chokeberry (*Aronia melanocarpa*) fruit juice isolates with a new fused pentacyclic flavonoid skeleton. *Org. Lett.* **2015**, *17*, 2988-2991.

**Naman, C.B.;** Gupta, G.; Varikuti, S.; Chai, H.; Doskotch, R.W.; Satoskar, A.R.; Kinghorn, A.D. Northalrugosidine is a bisbenzyltetrahydroisoquinoline alkaloid from *Thalictrum alpinum* with *in vivo* antileishmanial activity. *J. Nat. Prod.* **2015**, *78*, 552-556. (Special issue in honor of Dr. William Fenical).

Jia, Z.; Yang, X.; Hansen, C.A.; **Naman, C.B.;** Simons, C.T.; Slack, J.P.; Gray, K., inventors; Givaudan SA, assignee. Consumables (Sweetened consumables and methods of forming said sweetened consumables). European Patent Bulletin EP2175745B1. 2016 Mar 16.

### **SELECTED PODIUM PRESENTATIONS (FROM 43 TOTAL)**

“South China Sea Cyanobacteria Produce Unique Bioactive Metabolites” Presented August 13, 2018 as an invited lecture to the 2<sup>nd</sup> US-China Summit on Marine Natural Product Sciences, held in San Diego, CA, USA.

“Drugs From The Sea: Case Examples From Cyanobacteria or Blue-Green Algae.” Presented June 21, 2018 as an invited lecture for public outreach to the San Diego Wet Lab Citizen Science Seminar Series at the Downtown Central Library in San Diego, CA, USA.

“Frontiers in Marine Natural Product Drug Discovery.” Presented April 11, 2018 as an invited lecture to the 2<sup>nd</sup> Indo-US Mini Symposium on Marine Biotechnology and Biomedicine (Cochin University of Science and Technology, Kochi, Kerala, India).

“Targeting the Discovery of New Cancer Chemotherapeutics from Marine *Symploca* Cyanobacteria.” Presented November 21, 2017 at the 2017 Asian Federation for Pharmaceutical Sciences Conference (AFPS 2017) – Symposium II – Marine Natural Products in Xiamen, Fujian, China.

Potential Cancer Chemopreventive Activity of Fruit Phytochemicals from Black Chokeberry, Goji, and Maqui Berry Botanical Dietary Supplements.” Presented April 4, 2017 at the 253<sup>rd</sup> American Chemical Society (Spring 2017) National Meeting – Division of Agricultural and Food Chemistry in San Francisco, CA.

“What Chemicals Produced in Nature Can Offer Us: Consumer Products, New Drugs, and Ecological Understanding.” Presented February 7, 2017 as an invited lecture for public outreach to the Brown Bag Seminar Series at the Birch Aquarium at Scripps in La Jolla, CA.

“Modern Chemistry Methods from the Marine Biodiscovery Toolbox Facilitate Anticancer Research and Onwards.” Presented August 1, 2016 as an invited lecture to the 1<sup>st</sup> Indo-US Mini Symposium on Marine Biotechnology and Biomedicine (Cochin University of Science and Technology, Kochi, Kerala, India).

### **SELECTED LEADERSHIP AND SERVICE ACTIVITIES**

<u>NextGen Volunteer Board Member</u> , Jewish Federation of San Diego County	Jun	2017	–	present	day
<u>Postdoctoral Association Ambassador</u> , University of California, San Diego	Jun	2016	–	present	day
<u>Alumni Council Member</u> , Office of Admissions, Carnegie Mellon University	May	2006	–	present	day
<u>Graduate Student Recruiter</u> , College of Pharmacy, The Ohio State University	Jan	2011	–	Apr	2015
<u>Scientific Organizer</u> , Chemistry-Biology Interface Program (CBIP) Symposium	July	2014	–	May	2015
<u>Program Co-Chair</u> , 46 <sup>th</sup> Mid-Atlantic Graduate Student Symposium (MAGSS)	May	2012	–	Jun	2013
<u>Global Representative and Team Development Member</u> , Givaudan Flavors Corp.	Mar	2009	–	June	2010
<u>Outreach Volunteer</u> , Office of Alumni Relations, Carnegie Mellon University	May	2006	–	Aug	2010
<u>Sexual Harassment and Assault (Title IX) Advisor</u> , Carnegie Mellon University	Sep	2003	–	May	2006

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## PROFESSIONAL MEMBERSHIPS

American Chemical Society (ACS)	Aug	2005	–	present day
American Society of Pharmacognosy (ASP)	Feb	2012	–	present day
Rho Chi National Academic Honor Society in Pharmacy (PX)	Apr	2012	–	present day
American Association of Pharmaceutical Scientists (AAPS)	Oct	2012	–	present day
American Association for the Advancement of Science (AAAS)	Sep	2014	–	present day

## PROFESSIONAL REFERENCES

- Dr. Shan He                      Professor of Marine Pharmacy  
Executive Director of Marine Biopharmaceutical Research Center  
Vice Dean, College of Food and Pharmaceutical Sciences  
Ningbo University, Ningbo, Zhejiang, China  
Office Address:                Marine Biopharmaceutical Research Center Room 604  
Ningbo University, Meishan Campus  
Beilun Qu, Ningbo Shi, Zhejiang Sheng, China  
Phone                            +86.139.5783.5539  
Email:                            heshan@nbu.edu.cn
- Dr. William H. Gerwick        Distinguished Professor of Oceanography and Pharmaceutical Sciences  
Director of Center for Marine Biotechnology and Biomedicine  
Scripps Institution of Oceanography and Skaggs School of Pharmacy and  
Pharmaceutical Sciences, University of California, San Diego  
Office Address:                Sverdrup Hall Room 3232  
8615 Charles F. Kennel Way, La Jolla, CA 92037, USA  
Phone:                            +1.858.534.0578  
Email:                            wgerwick@ucsd.edu
- Dr. A. Douglas Kinghorn      Jack L. Beal Endowed Chair Professor  
Editor-in-Chief of *Journal of Natural Products*  
Division of Medicinal Chemistry and Pharmacognosy  
College of Pharmacy, The Ohio State University  
Office Address:                Parks Hall Room 446  
500 West 12th Avenue, Columbus, OH 43210, USA  
Phone:                            +1.614.247.8094  
Email:                            kinghorn.4@osu.edu
- Dr. Roberto R. Gil              Research Professor and Director of NMR Facility  
Editor-in-Chief of *Magnetic Resonance in Chemistry*  
Department of Chemistry, Mellon College of Science  
Carnegie Mellon University  
Office Address:                Mellon Institute Room 302  
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